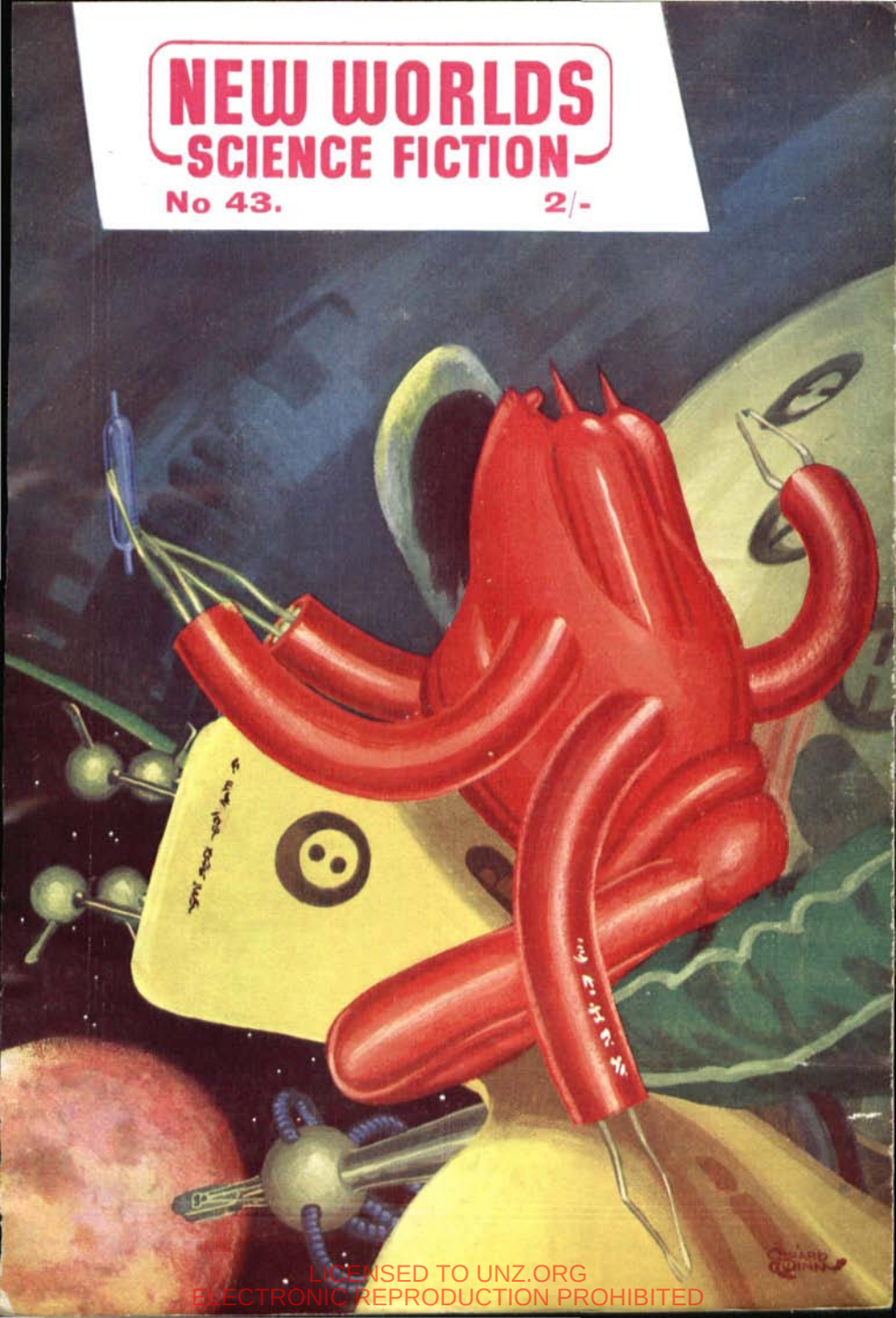
NEW WORLDS SCIENCE FICTION

No 43. 2/-



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NEW WORLDS
PROFILES

John K. H. Brunner

Oxfordshire

Born in 1934, at Preston Crowmarsh, Oxfordshire, and educated at Cheltenham College, John Brunner made his way—like many present-day writers—by way of science fiction to an interest in science itself, and began the journey early. After reading Wells's *War of the Worlds* and *The Time Machine* at the age of seven, he became a confirmed addict; he claims to have begun (though not to have finished) his first science fiction story two years later in order to satisfy the craving for more of the same.

A few months before leaving school at the end of 1951 he sold a novel to a firm of pocket-book publishers, invested the proceeds in a typewriter, and began on the next. During 1952 he was unfortunate enough to sell two long stories to American magazines—at the height of the 'boom,' when practically anything could be sold — and made up his mind to continue writing as a career.

The advent of National Service, during which he served as a pilot officer in the secretarial branch of the R.A.F., put a temporary stop to this intention, but since his discharge at the beginning of 1955, he has been writing steadily.

He is intensely interested in the potentialities of sf as a literary *genre*, and much prefers to treat the reactions of human (and alien) beings to the progress of science, rather than the possible development of new technology *per se*. His other interests include folk music, especially traditional jazz and the blues, playing the guitar—very badly—and good conversation on practically any subject under (or beyond) the sun.

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NEW WORLDS SCIENCE FICTION

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1955 I.F.A. Presentation

Owing to the rearrangement of our production schedule caused by the Christmas holiday it happens that this section of the magazine will be printed last, which just enables me to cover the presentation ceremony of this year's International Fantasy Awards, held on November 29th at the Criterion Restaurant, London, in conjunction with the publishers who form the Science Fiction Luncheon Club group.

Guest Chairman for the occasion was popular author and scientist Arthur C. Clarke who has just returned by way of U.S.A. from a year's trip along and under the Great Barrier Reef in Australia, where he has been colour-filming for material for a new non-fiction book on undersea adventure. Members and guests were given an interesting factual account by our book reviewer Leslie Flood who is also Secretary of the Award Committee, of how the International Fantasy Awards were founded as a non-profitmaking organisation to reward merit and ability in the field of fantasy literature. He pointed out that although American writers had consistently taken first place (although John Collier who won the trophy in 1952 was born in England, he is now a naturalised American) British writers had never been far behind. In fact, Arthur Clarke and John Wyndham, who were present at the luncheon, and J. T. McIntosh of Edinburgh who was unable to attend this year, had had novels voted close to the winning titles during recent years (McIntosh tieing for third place this year while Wyndham had run John Collier a close second in 1952). He hoped to see a British author win first place in the very near future.

The handsome trophy won this year by American author Edgar Pangborn for his book *A Mirror For Observers* was accepted on his behalf by J. C. Reynolds, editorial director of Frederick Muller Ltd., who published the British edition. In presenting the award Arthur Clarke mentioned seeing last year's trophy only a few weeks ago when he visited Theodore Sturgeon in New York and hoped that Mr. Pangborn would not put his trophy to the same use—as a paper weight! He also remarked that so far he has been unable to adapt the fuel from the lighter in his own trophy (won in 1952 for his non-fiction *Exploration Of Space*) into a propulsion unit for the model rocket but that he still has hopes of achieving this end.

In his reply of acceptance Mr. Reynolds pointed out the fact that his company did not officially publish science fiction but that the books they had produced in this field were listed as general fiction. He felt this allowed greater scope for sales and widened the range of readership to include many people who must of necessity be put off by the

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very term " science fiction." A measure which has been advocated by many writers and is now being considered by some publishers.

The Chairman then presented the Certificate of Merit for the second place selection of Hal Clement's *Mission of Gravity*, which was accepted on the author's behalf by Fred Olive of Robert Hale Ltd., the British publisher, who stated that he was more than gratified to find that the only science fiction title they published during 1954 took an award.

Among the numerous guests present were Miss Barbara Noble, head of Doubleday's London office, whose American office were responsible for the first four winning titles in this year's presentation ; Dr. J. G. Porter, Director of the Computing Section of the British Astronomical Society, who readers will readily recognise as the popular broadcaster on astronomy—and who is incidentally on the adjudicating panel of the *Science Fiction Book Club* ; Charles Chilton, creator of the " Journey Into Space " radio serial together with Andrew Foulds the actor who plays the part of " Jet Morgan " ; airmindedness was represented in the persons of Arthur Johnson, editor of the *R.A.F. Flying Review*, and L. J. Bittlestone, Secretary of the Air Scouts, whose organisation I understand are becoming increasingly interested in both space travel and science fiction and will be organising lectures on both subjects for the members in the near future.

Another interesting personality was Ronald Edwin, whom British readers will remember as the esper who confounded Gilbert Harding on " What's My Line " earlier this year. Mr. Edwin has a new book just published by Sidgwick & Jackson in their " Psi Library " entitled *Clock Without Hands* dealing with extra-sensory perceptionism which we shall review shortly. An amusing aside happened as visitors were leaving the restaurant—finding no cloakroom attendant present Mr. Edwin vaulted the counter and proceeded to hand out hats and coats until one member, when asked for his cloakroom ticket, said " being an esper you shouldn't need my ticket." Never lost for a reply (as the panel on " What's My Line " found to their cost) Mr. Edwin promptly replied " Sorry, old chap, I'm not on duty at the moment !"

One personality I should have liked to have met was prevented from appearing at the last moment—he was Nigel Neale, author of the exciting cliff-hanger T.V. serial " Quatermass II " which has just ended on the B.B.C.

John Carnell

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HOST AGE

It would seem that the human body has a tendency over a long period to adjust itself against injected serums used to nullify known diseases and fevers. As one illness is conquered in the laboratory so a completely new one takes its place. A deliberately induced plague would be a terrible scourge for Mankind to try and overcome—it would undoubtedly alter history.

By John Brunner

Illustrated by QUINN

I.

Clifford waited a long moment before he could admit it to himself, looking down at the wasted face in which the old beauty was even yet discernible, at the dark hair spread across the pillow. His eyes suddenly began to sting with tears, and he blinked them back in annoyance. That was ridiculous.

In illogical anger with himself, he motioned to the nurse to draw the sheet over the dead woman's face, and she did so. He turned away and began to gather his instruments, and found that the ward

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sister was eyeing him with a questioning but sympathetic gaze. He felt impelled to explain.

" She—she was the wife of one of my best friends," he said gruffly, and the sister nodded understandingly. She made no protestation of regret, and he was thankful for it. This was neither the time nor the place.

" Disease—especially this one—doesn't take much account of personal feelings," he went on after a moment. " If you'll make out the certificate, I'll sign it before I go home."

He cast a lingering backward glance at the still form on the bed, and then moved heavily on to the next patient. There were sixty beds in this ward alone, each divided from the next by the little folding screens, and every last one contained a victim of the Plague.

" There's only number forty-seven for you to look at now, doctor," he heard the sister say from behind him. Mechanically, he looked about him and headed towards the numbered cubicle. Forty-seven ? He searched through his mind. Oh, yes. That was Buehl, the spaceman, weak but recovering, although he had gone ten days without treatment before his condition was identified. Clifford wondered sourly whether the drugs and antibiotics he had given had actually had any effect. They had worked—apparently. And yet he had tried the same combination on Leila Kent, and she was dead.

He shut the thought determinedly out of his mind. A doctor could not start questioning the foundation of medicine in that way. But the fact which prompted the idea remained. Sometimes the Plague killed, about one in ten of its victims, and nothing worked ; at other times a therapy which had failed elsewhere would produce a miraculous cure in a matter of days.

The man in Bed 47 looked up and grinned, and Clifford forced an answering smile on to his face. " Well, Buehl ?" he said. " How's it going ?"

The spaceman folded the technical magazine he had been reading and lay back, un-zipping his jacket. " Better, I think, doc," he said, barely managing to finish the words before opening his mouth wide to admit the bronchioscope.

" It certainly looks like it," Clifford agreed. His fingers directed the probing instrument cautiously, and his mind compared the visible state of the man's throat with his memory of its condition yesterday. There was no doubt about it ; Buehl was well on the way to recovery.

He snapped the bronchioscope shut. " You're improving," he told the patient. " We should be able to let you go in another three or four days. You'll be back aboard your rocket inside the month."

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" Odd, you know, doc," said Buehl musingly, stretching out his arm for the prick of the haemometer. " This article I was reading just now. I used to think a rocket was just about the perfect kind of transport. That's why I went in for the space service, I guess. An efficient way of getting about. Now here's a chap at General Electric saying we've never even come near having a real kind of transport."

The haemometer clicked, and figures mounted across the face of its dial. Clifford noted the information: blood count rising, oxygen utilisation within five per cent of normal. He dropped the end of the probe into the steriliser and began to attach the terminals of the electroencephalograph. " What does he mean by that exactly ?" he inquired, pressing the little suction cups down on the patches of shaven scalp hidden among Buehl's brown hair.

" Oh, he says the perfect way of getting about would be instantaneous, for one thing. You just step in here and you're there, boom ! All our cars and planes and space ships waste time in moving. He says that's wrong."

In the midst of concentrating on the wavering greenish glow which indicated Buehl's brain rhythms, Clifford found time to notice that *something* had happened to the spaceman. Up to now he had been confining his conversation to food, drink and women. He said absently, " I'm afraid I don't know much about that sort of thing. Close your eyes, will you ?"

Buehl obeyed, and a corresponding change appeared in the green glow.

" Now hold your breath."

The pattern was normal again. The irregularity produced by bodily malfunction was steadily vanishing. He said, " Okay, you can come to life again," and reached for the terminals to pull them off.

" I thought they'd been kicking that idea around for a long time," he added. " The matter transmitter, isn't it ? You scan the molecular structure of the thing you want to ship and pipe it down a radio beam."

" You can't get a big enough band-width to do that." The spaceman tapped the upturned back of his magazine. " This Wiseman's talking about something entirely different. He means identifying two volumes of space. He says if he can make two places exactly similar, and force them to try and remain so, the introduction of a solid body into one of the locations will tend to force it into the other one and preserve the balance."

Clifford hooked the flexes back into place and played the ultraviolet steriliser over the suction cups on their tips. " It's all Greek to me," he said. " But it sounds interesting if he can make it work."

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"I don't know about making it *work*," said Buehl judiciously. "But, doc, could you let me have a computer and some scribbling paper? I want to check his math."

Clifford had been on the point of telling the ward sister to arrange for Buehl to go out into a convalescent ward. The request brought him back with a start. He had always found it hard to think of Buehl as an intelligent man, though he knew that anyone who made the requirements of the space service was pretty good. "Why—I should think so," he answered. "Are you really up to that sort of standard?"

Buehl grinned. "I should be, doc. I can run celestial mechanics in my head when I have to. I did have to once, when a pebble knocked out our nav computer on the Mars run."

Clifford turned to the sister again. "See that he gets what he wants, will you?" he asked. "I should think the statistics people could loan him a portable keyboard computer. And he's doing fine. You can put him into one of the convalescent rooms now."

And the bed can be used for a serious patient, his mind ran on. Lord knows there's no shortage of them, with the Plague running through the country like a forest fire.

That finished his rounds for the evening, and he had never been so heartily glad of the fact. He had been on since six a.m., and it was now past four, and in the course of the day he had signed nine death certificates—all from the Plague.

Tiredly, he left the ward, stripping off mask and gown in the anteroom and sending them for destruction. Then he went into the showers and spent five minutes scrubbing himself with germicidal soap, and changed into his day clothes again. He was fit to face the world now—he hoped. By all accepted standards he was as clean as he could be, but accepted standards had been going by the board with dismaying rapidity since the inception of the Plague.

When he looked in at the house surgeon's office to await the arrival of the certificate for Leila Kent, he found his night relief already there and on the point of going to change. He summed up the state of the more difficult cases for him briefly, and they chatted desultorily for a few minutes until the sister arrived with the papers.

He was almost out on his feet by now, but he sat down determinedly and read through them all with care from sheer force of habit rather than because he expected to find any errors. He signed and thumb-printed them and handed them back.

As she took them, the sister said hesitantly, "There's a policeman waiting outside, doctor. He's been here for about half an hour. He says he'd like to speak to you personally."

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"Damn the man," said Clifford wearily. "Oh, well. I suppose you'd better send him in."

She nodded and went out. A moment later a man in an inspector's uniform with Metropolitan Constabulary badges looked round the door and then entered. He was a big man with fair hair and a harassed look in his eyes, which gave Clifford a momentary twinge of sympathy. He recognised the parallel to his own outward appearance of worry.

"I'm sorry to bother you, doctor," the visitor began, but Clifford cut him short.

"That's all right, Inspector. Sit down, won't you?"

"Thank you. My name is Jaffry, and I'm from the Missing Persons department. I expect you can tell what it is I want to see you about."

Clifford shook his head, trying to smile. "I'm too tired for guessing games."

"Of course. I'm sorry. Well, you attended one of the first cases of the —uh— the Plague, didn't you? I don't know the official name for the disease."

"Nobody's had time to christen it yet," said Clifford. "Plague's as good a name as any."

Jaffry nodded. "The case I'm referring to is that of an unidentified man who was brought in by a lorry pilot who gave him a lift from Maidenhead. A stout man of about fifty or sixty. You know the one I mean?"

"Yes, I remember. He was already unconscious when he arrived and didn't speak before he died. We've had several such cases. Didn't we do right to notify you to trace the relatives?"

"You did quite right, naturally. That's our trouble. When you say there's been several such cases, you're understating the facts. There have been over one hundred in the Greater London area up to now—people either hitch-hiking and passing out in the vehicle or taking a train or 'copter and being found unconscious on arrival."

"I see. What can we do about it?"

"Half a minute, please." Jaffry raised a hand. "All the cases I'm talking about have one thing in common. They weren't ordinary vagrants—which are few and far between nowadays. They were well-dressed, and most of them had fair sums of money in their pockets. But not one of them bore any sort of identification."

"That does sound odd," Clifford agreed.

"It's not odd, doctor. I can assure you from my own experience that it's unheard-of. How many things does the average man carry which give his name? Health card, national insurance card, driving licence, flying licence, often some personal letters. Even if it's only the laundry mark on his clothes, we usually find something. We

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normally dispose of ninety per cent of the missing persons cases we handle. Occasionally one might turn up that had no distinguishing marks, but not a hundred within a few weeks.

"Well, we're not unnaturally worried. So it occurred to us to ask you, who have incidentally reported more of this type of case than any other doctor in London, whether you think it possible for the Plague to so derange them that they deliberately destroyed their identification?"

Clifford laughed without humour. "Inspector, I wouldn't be telling the truth if I said categorically it could not. We don't even yet know enough about the Plague to say what it can and cannot do. I should say it was highly unlikely. I daren't go further. Even if it did, though, surely someone would miss them and report their absence?"

Jaffry sighed heavily. "You'd think so, wouldn't you? The fact is, however, we've been unable to trace any of them further back than shortly before their last journey. Oh, we've turned up people who saw them or who sold them meals in restaurants and things like that, but no one who found out their names. And none of them lived long enough after reaching hospital to help us."

"Is that really all you can find out?"

"Practically all. We've started an intensive investigation in the area where they came from—that's odd, too; all of them were travelling roughly from west to east across the country. For the most part, the London cases picked up their vehicles in the Slough and Maidenhead area, where the heavy vehicles have to land before going into the centre of the town on the surface. So far, we haven't had any luck. It looks as if they just dropped from nowhere."

Clifford hesitated a moment. He said slowly, "As a matter of fact, Inspector, that ties in with an idea of mine. You doubtless know that the Plague is completely different from any other disease of its kind ever to hit us. Could they quite literally have dropped from nowhere—I mean from space, without going through quarantine?"

Jaffry shook his head, a slight smile curving his lips. "That was one of the first ideas we eliminated. You know the motto of the air traffic control section—the unofficial one?"

"'No sparrow shall fall'," quoted Clifford correctly. "I see. No unauthorised spacecraft?"

"Positively not." Jaffry seemed to be collecting himself. "Well, doctor, I've given you an idea of our problem. What we'd like you to do is notify us of any more such cases immediately you get them in—don't wait till they're beyond hope—and particularly let us know if you manage to cure any of them. You needn't worry about ordinary

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tramps. It's the well-dressed ones with ready cash on them that we want to know about. Perhaps if we can learn something from even one of them we'll have a clue to explain the others."

"Yes, we'll do that gladly," consented Clifford, making a note on a memo pad, and Jaffry got up, thanked him, and took his leave.

For a few minutes after the policeman's departure, Clifford remained in his chair, brow furrowed. This was another problem to add to the myriads in his own field which the Plague had set them: Its pathology was impossible; its response to treatment was inconsistent; as for its causative organism—well, not for nothing had they slapped the tag *bacterium mutabile* on it.

He got up at length and walked out of the hospital and down the road to the park where he had left his car. As he pressed his forefinger to the electric eye of the lock, a newsboy on his scooter rolled up; the placards on the sides of the engine mounting said: PLAGUE—DEATH ROLL MOUNTS.

"Paper, sir?" said the boy hopefully.

For a second Clifford was tempted to snap at him, and then he wearily fished in his pocket for one of the elusive tenth-credit pieces. Taking the folded sheets, he shook them out and look distractedly at the headlines. They only repeated and expanded the statement on the placards.

He slipped into the driving seat, thrusting the paper into a pigeon hole. It could wait. While he waited for the turbine to warm he debated whether he should go straight home and get some rest, but he knew even as he considered the question that the thought was empty; his mind was already made up. He had another errand to run first.

II.

He parked the car opposite the big sign which told the passers-by that they were now seeing Kent Pharmaceuticals. There was another car just ahead of his own, and despite his tiredness he stopped to admire it. It was a flashy and very new Hunter convertible, done up in black and red. He had always liked to look at fine engineering, and he ran his eyes appreciatively over the smoothly faired cowling which concealed the folded rotors and the retracted stub wings. After a few seconds he realised he was wasting time, and he went into the office block which faced the road. Kent Pharmaceuticals was a wealthy firm, and less than ten years ago had rebuilt its entire premises, making it the most modern in the country. The spacious, almost arid reception hall was empty except for the receptionist at her desk, who wore the haggard look characterising anyone connected, no matter how remotely,

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with the heart-breaking business of fighting the Plague. She brightened slightly on recognising Clifford.

"Good evening, Dr. Clifford," she said. "We haven't seen you for some time. How are you?"

"Busy as all hell," he said shortly. "Is Mr. Kent in?"

"Yes, he's here. He's got a visitor at the moment, though. Someone from Balmforth Latimer, actually."

Clifford frowned with the effort of recollection. He was much tireder even than he had thought. "Balmforth Latimer? Isn't that the village in Gloucestershire where they had the first case of the Plague?"

"That's right." The girl's eyes searched his face. "Doctor, is something wrong? Is it Mrs. Kent? She was in your hospital, wasn't she?"

He nodded sourly. "*Was* is right, I'm afraid, Marjory," he said in a thick voice. "She died about half an hour ago."

"Oh, how dreadful!" The girl waited a moment in formal respect. "Does—does Mr. Kent know?"

"I expect the hospital has called him by now. I just came to express my regrets. Is his visitor going to be long?"

"I don't know." Marjory glanced around, and stiffened slightly. "Oh, here he comes now."

The door of Kent's office on the far side of the hall opened as she spoke, and a tall man with black hair lightly touched with grey came out, carefully pulling it to behind him. He walked straight across the hall and out of the building, nodding to the receptionist as he passed her. He bore himself with a stiff, rather formal air, and Clifford placed him as a retired military man. With the drastic cutting of armed forces over the past twenty years, they were common.

The squawk-box on the reception desk said something incomprehensible. "Dr. Clifford to see you, sir," Marjory told it in a subdued tone. The rising sound of a car turbine starting up outside prevented Clifford from hearing the answer, but he crossed the floor without waiting and went into Kent's room.

Kent was sitting at his desk, his thick-fingered hands folded in front of him, his red head downcast. He gave no sign of having heard Clifford come in.

Awkwardly, Clifford hesitated in the doorway. After a moment he cleared his throat. "You've heard about Leila, I suppose, Ron?" he ventured.

As if coming back from a great distance, Kent nodded, his head moving once fractionally back and forth.

"I just came over to say how sorry I am."

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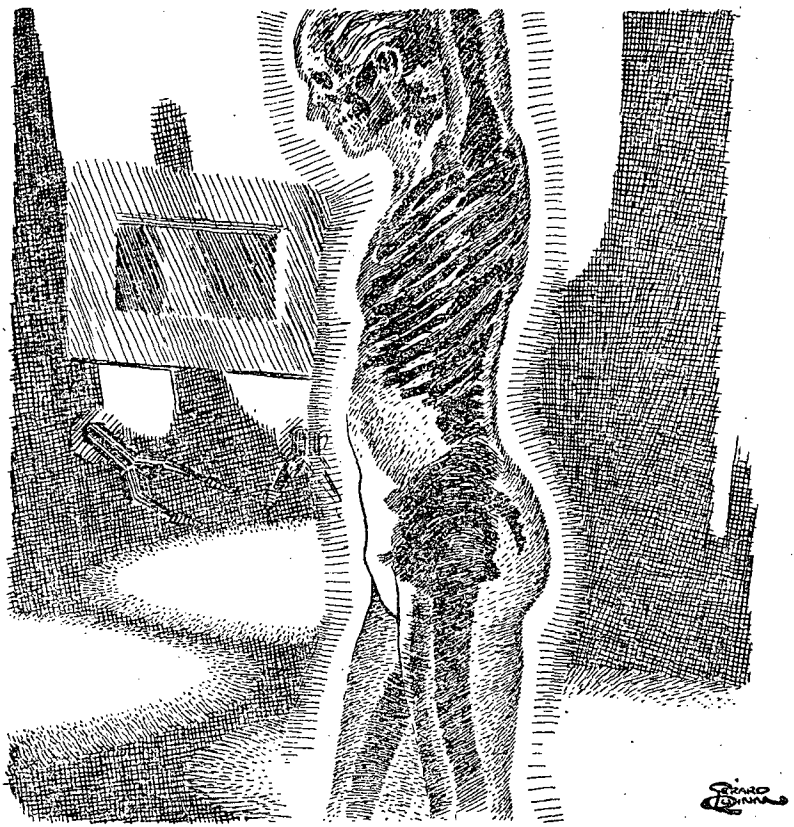

Forcing himself to recover full awareness, Kent raised his eyes to meet his visitor's. "There's no need to say it, Cliff," he said in a low voice. "I know. Won't you sit down?"

Clifford did so, and after a pause Kent went on, "I'd have liked to be there—at the end, you know."

"Believe me, Ron, it wasn't possible. We'd have notified you if we'd known in advance, but the Plague sometimes just finishes them off within a couple of hours of a relapse. This morning, Leila was doing fine, as I told you. This afternoon—" He snapped his fingers.

"She'll have been cremated by now," said Kent without emotion, and Clifford nodded.

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" Yes, I'm afraid so. Until we have a decent control on the Plague, we'll have to go on taking the one sure precaution against it spreading. I signed the certificate about half an hour ago."

Kent picked up a stylus from the desk in front of him. He turned it between his strong, stubby fingers as he spoke. " It was nice of you to come, anyway, Cliff. Don't think I don't realise how much you must have done—"

The stylus snapped with the convulsive grip he put on it, and his tone changed abruptly. " God, Cliff, I wish I'd stayed in practice instead of taking over the firm ! I wish I could *do* something, instead of sitting here and worrying !"

" Believe me, you're better off than I am," Clifford told him bitterly. " We don't *do* anything. The Plague dictates to us. Oh, we save some of the borderline cases, but we can't say who'll live and who'll die. I honestly don't yet know whether we've cured anyone who wouldn't have got better by himself. In the last resort it'll be you people who find the answer. A doctor is as good as the research staff backing him up. We use the drugs and the antibiotics, but first you have to give them to us." He felt an urge to get off that subject. It was too full of frustrating memories. " Who was that visitor you had just now ?" he asked abruptly.

Kent made a gallant effort and dismissed the sorrow from his mind. He took out cigarettes and handed one silently to Clifford. Puffing his own into life, he said, " A man called Borghum, from Balmforth Latimer. It seems he employed the first man to go down with the Plague as a gardener. He came in and asked to see over the lab. It was a—a distraction."

There was a pause. Desperately, Clifford went on, " A military man, is he ?"

" He looked like one," Kent agreed sombrely, and there was another silence. The haggard look crept back into his face.

Noting it, and wanting urgently to avoid the issue of Leila's death, Clifford broke the stillness. " Ah—are you having any success with your tests ?" he asked, trying to sound as if he was really interested.

Kent frowned, then brightened. " Oh, yes. I think I mentioned when I rang you this morning that K39 looked hopeful."

" K39 ? What have you got in there ?"

" Chrysomycetin—a new broad-spectrum antibiotic we've been experimenting with. It's only showing thirty-three per cent overall efficiency, but it's kept that up for eighteen hours now, and you know the Plague got around pantomycin in under three."

Clifford detected a note of real enthusiasm in Kent's voice—an excellent sign. He pressed on, " But, Ron, how the devil do you

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manage to control your tests? I know from my own experience that you can get results with one drug on one patient, and maybe the man in the next bed will die in spite of getting exactly the same stuff."

Kent shook his head, making a wide swathe of smoke in the air before him as he breathed out gustily. "Cliff, believe me, this bacterium is unique. We can't tell the difference even under an electron microscope between two samples of it, and yet one of those two will give in to something utterly ridiculous like sulphanilimide, and the other will flourish as if the drug were nutrient medium. We thought we were on to something with scarlet fever anti-toxin at one time—it knocked out nine specimens in a row—but it didn't do a goddamned thing to the tenth."

"Is nothing about it consistent?"

"Not unless it has a definite adaptive cycle. Jezzard is working on that now. His suggestion is that it may go through a sequence of changes of nature—a sort of continuous mutation cycle—during each stage of which it has different response characteristics." He was warming to his thesis.

"That would make the reaction of the patient depend on whether there was an antitoxin inimical to the bacteria in that particular phase present in the bloodstream. Take our samples which respond to scarlet fever antitoxin. If a patient who had had scarlet fever caught the Plague in its right phase, he would recover. But if he had had some other illness which the bacteria did not respond to, he would die. That's what makes our job so damnably hard. We can't inoculate from a recovered patient, because what killed the germ in his body might not be the same as the one affecting the type the new patient has. Equally, we can't simply pour everything to which any sample of the Plague has shown a response into each case, because the mixture would be more likely to kill the man than the bug."

"That's very interesting, that cyclic theory," said Clifford musingly. "It's the first reasonable way I've heard to account for its unpredictability."

"It'd be fine if we could prove it. But we haven't eliminated genetic predisposition yet. Barnaby's are trying to correlate blood types with susceptibility, though so far they've found random distribution. Hagwell is looking into even such unlikely questions as smoking and dieting habits. That'll show you how far we've been driven."

He stubbed his unfinished cigarette, getting to his feet. "Come down with me and take a look at the lab. The day shift will be leaving in another quarter of an hour, but you should be able to see quite a lot in that time."

"I'd like to," agreed Clifford, and followed the other out of the room.

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III.

Part of the modernisation scheme at Kent's had included the provision of all-remote handling for dangerous specimens, a technique adapted from radio-active methods. They found Jezzard and his team of biologists in a small sealed ante-room, from which they watched the progress of the test items in the culture room next door by means of scanners and handled them by using the intricately levered pseudo-hands whose controls stuck out from the dividing wall like enormous shiny metal spiders' legs.

Jezzard himself, whom Clifford had previously met, sat at a table opposite the airlock poring over a heap of papers, all of which looked like identical maps of Britain, differing only in the distribution of the smears of blue chalk patched across their printed faces.

"Don't let us disturb you," said Kent. No one could have told from his tone or manner that he had lost his wife so shortly before. So long as the Plague was something remote and impersonal to be fought on an intellectual level, they stood a good chance of getting unbiased results, but the introduction of emotional prejudice would be dangerous.

Jezzard raised his bespectacled face from his charts. "Good evening, sir," he said. "Hullo, Cliff, how are you?"

"Pretty worn," Clifford told him, attempting a smile. "What are you doing at the moment?"

"The usual." Jezzard dismissed it with a wave of his hand. "Trying everything we can think of on our Plague samples. The blasted stuff is so inconsistent we can't just test it once; we have to set up an entire range of varying types for each drug and antibiotic we test. The stuff which works on one lot may—"

"I've just been hearing about your cyclic development theory," Clifford interrupted gently. "It's ingenious."

Jezzard took off his glasses, wiped them very rapidly on the sleeve of his lab smock, and shoved them back on his nose. He wriggled his ears vigorously to settle the side-pieces more comfortably before he answered.

"Theory is all it is, I'm afraid. We thought we'd established that the scarlet fever antitoxin response followed the sulphanilimide response, but we haven't managed to turn up an example of that sequence for two days now. We have one thing that looks promising, though." He raised his voice. "Spencer! How's K39 doing?"

A man bent over the eyepiece of a remote viewer set in the wall straightened up and made a scribbled note before replying. "It looks

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remarkably healthy," he said in a guardedly optimistic tone. "It's showing about the same level of success in all the dishes."

"That's fine," endorsed Jezzard. "Like to take a look, Cliff?"

Clifford nodded, and bent to the binocular-like fitting. When he had adjusted the focus slightly, he saw the familiar outline of a Petri dish filled with nutrient medium, on whose surface four smears of bacteria radiated at right angles from a central blob of pale golden crystals which he knew for chrysomycetin.

He found and manipulated the slide control, and the object-glass slid along its rail beyond the wall to the adjacent dish. There were nine of them altogether, and in each, though the streaks of bacteria had multiplied and spread at the outer ends, the spread was small and the inmost germs did not seem to have developed at all. Thirty-three per cent efficiency, Kent had said. It looked very promising.

He stood up from the eyepiece and said so, and Kent appeared pleased. Jezzard nodded. "There's one trouble," he said sourly. "You've just seen nine-tenths of all the chrysomycetin in Britain—probably in the world. We only produced the first samples of it the week the Plague broke, and the mould which secretes it is damnably difficult to breed. Maybe direct synthesis would be quicker—if we knew how to achieve organic synthesis on that scale."

He shrugged, and turned back to the table at which he had been sitting. "I'm glad you came down, actually, Mr. Kent," he went on. "I've been working on something new I wanted to show you."

Kent looked at the pile of maps in puzzlement. "I thought you were charting the life-cycle," he remarked.

"Watkins is taking over that," said Jezzard. "It only occupies part of my time. Here, you know what this is?" He held out a map which bore a dozen heavy criss-cross patches of the blue chalk.

"That's the present distribution of the Plague, isn't it? A copy of one of the Ministry of Health bulletins."

"That's right. The incidence at noon yesterday. This is the original." Jezzard indicated a smaller version, apparently clipped from a duplicated circular.

"Now, as you know, they only began to put these out a couple of weeks ago, when there were already several thousand cases reported. It occurred to me to backtrack and get out charts for the very early stages of the disease, before anyone was seriously concerned about it. Now take a look at what I've found."

Kent and Clifford came up to the table, and he dropped the first of his maps in front of them. "I can't guarantee the completeness of these," he added. "I made them up from newspaper accounts. But here's the rough situation at the twentieth of May—a week after the

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first outbreak. The patch here, of course, is Balmforth Latimer, where the first case was discovered on the twelfth. Now it had four cases and more to come. It had already spread to the towns nearby, to Gloucester, Cheltenham and Tewkesbury."

He put down a second chart. "A week later," he told them. "Oxford Slough and Maidenhead. Notice how it's sort of moving east across the country—not in direct succession, but in overall trend."

Again a change of map. This one looked like a bad case of measles; the blue spots were numerous. "Another week and we're into June. The Plague was in London by then, and had begun to move north. Birmingham and Rugby both had it. And there are outbreaks in outlying places which can be ascribed to secondary infection."

He leaned forward. "Does that spell anything to you?"

Clifford snapped his fingers. "Of course!" he exclaimed. "Typhoid Mary!"

Kent made a noise indicative of incomprehension, and Clifford turned to him. "Typhoid Mary was the first and most famous example of a carrier who could infect people with a disease and not suffer from it herself. She was a cook in America about a hundred years ago, I think, and gave typhoid to all the people she worked for."

Jezzard nodded. "You've got it," he said simply.

There was a pause. Then Kent leaned forward and began to examine the maps more carefully, tracing the progress of the Plague since its inception in Balmforth Latimer, a little village in Gloucestershire which had never had any kind of notoriety before it acquired this unwelcome and uncalled for fame. "I see what you mean," he said reflectively. "Why hasn't anyone noticed this before?"

Jezzard shrugged. "I should say at a guess that when the first charts were compiled, the original trend had been randomised by secondary infection. You need to take it right back to the first hundred odd cases before it hits you."

Clifford chewed a knuckle for a moment. "I think you ought to let the police know about this," he said at last. "If there really is a single focus carrying the Plague, they should be able to find out if anyone did follow this route. He'd need to be on a sight-seeing tour, or travelling for an agency, perhaps. They could check the lists of firms who employ workers on that circuit."

"Yes, definitely," agreed Kent. "I'll call them right away. This is very astute of you, Jezzard."

"Of course—" Jezzard seemed to be hesitating. Then he gathered himself and took the plunge. "There are a couple of other odd things about the Plague you may not have noticed."

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Clifford laughed sourly, and Spencer, who had been listening from his post at the scanners, put in, " There are so many queer things about this disease we can't hope to guess which ones you mean."

" You stay out of this," said Jezzard good-humouredly. " Well, to start with, the fact that it's obviously like nothing else we've run into before."

" A spatial development ?" said Clifford, and before he could repeat what Inspector Jaffry had told him about all spacecraft being accounted for, Kent suggested, " Something picked up on the Moon, or Mars ?"

Jezzard shook his head emphatically. " I suppose a spatial development is possible, but it would have to be the mutation—perhaps by cosmic radiation—of an existing organism. I don't see an alien bacterium adapting so completely to man as a host."

Clifford, who had been thinking deeply, interrupted him. "Spatial development is definitely out. I know quite a bit about the clearance they put returning spacemen through. They keep them quarantined for twenty days, to start with, and the Plague normally incubates in sixteen. And they take blood samples and breed out all their bacteria so that they can identify them. I remember a patient of mine—a man called Buehl—telling me the other day that they kept him in a month once because a biologist failed to recognise a coryza virus."

Kent, he saw, was listening attentively, and he could see the effort he was making to maintain his outward calm. He felt a sudden surge of pity, and resolved to cut this talk as short as possible.

Jezzard went on, " I thought we'd have to rule out that. In fact, I believe that the Plague is so—what shall I say ?—so efficient that it almost looks as if it was designed to affect human beings. Taking that with the fact that so far it has only appeared in Britain—"

" Are you trying to say you think it's been planted *deliberately* ?" demanded Clifford in an incredulous tone.

" Of course, it's ridiculous," said Jezzard hastily. " But have you stopped to consider what the incidence actually is ? In the areas so far affected, roughly one person in ten catches the disease. Of that tenth, again one tenth dies. If that goes on, we're going to lose one per cent of the population—that's about *five hundred and fifty thousand deaths* ! I've got the figures on its effect in factories and power plants —it's already started to paralyse the country's economy."

Clifford shook his head determinedly. " I won't accept it," he said firmly. " Not unless I have to."

" Well, naturally I hope you never do," said Jezzard defensively. " Nonetheless you have to admit we've lived in a troubled world these past fifty years. We've never really got over the Cold War—"

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"Keep that idea to yourself, Jezzard," said Kent suddenly in an authoritative voice. "That's an order. And it goes for the rest of you, too," he added, looking round the room. The rest of the team nodded immediately, and Spencer muttered, "Of course!" in a shocked tone, with a glance at Jezzard.

"Come on, Cliff," Kent said. "It's almost five, and they'll want to make over for the night shift."

Clifford was glad to follow the other into the airlock. As they waited for it to cycle, Kent said gruffly, "I'm sorry to drag you away, Cliff. Jezzard's one of the best men we have, but his ideas are sometimes a little unorthodox."

Clifford said dryly, "I can tell that. I shouldn't have thought anyone could have jumped to such a stupid conclusion in these days."

"Oh, he's sensible enough on most subjects. He tends to treat the campaign against disease as a real crusade. My company psychiatrist says it fulfils an unsatisfied longing for violence. He'd have been a soldier fifty years ago, I suppose. Speaking of his other ideas, how about his notion that there may be an unconscious carrier?"

"On the face of it, it's very reasonable. Such a clear succession of areas of incidence is rare in a disease."

"All right, then, I'll notify the police." Kent mused for a second as they walked towards the hall, and then went on, "Damn it, it's infernally convincing, that idea that it may be deliberately planted! Did you know that they've appealed to the World Health Organisation for the country to be declared an area of menace?"

"Have they now? Whose idea was that?"

"It was in the news this morning. The Ministry of Health is sending a delegation to New York to see the Secretary of the directions committee tonight."

"Well, that has its points. It means we get all the emergency medical teams we need—"

"Yes, and into the bargain quarantine for emigrants, no tourists, robot loading of ships and aircraft, a ban on space travel—you know the provisions?"

"I certainly do," said Clifford grimly. "It may make it hard on us. This will be the first time an entire country has gone under ban, won't it?"

"I believe the biggest previous one was the blackwater fever belt in Central Africa, and they licked that inside a month. The Plague won't be so easily got rid of."

They had reached the door of Kent's office now, and on glancing at the receptionist he caught her eyeing his companion sympathetically. He wondered for a moment whether he should stay and comfort his

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friend, but he was forced to admit that he should go home and get some rest. His duty to his patients outweighed even such a long friendship —he and Ron Kent had been in medical school together until Kent gave up medicine to take over his father's pharmaceuticals firm and build it up into one of the best in Britain, and he had been his best man when he married Leila.

Who is now dead, he remembered with a pang.

He found Kent looking at him diffidently, plainly unwilling to ask him to stay with him, and he tried to smile. " Ron, you know I would keep you company if I could. But I'm dead tired, and I've got to be back at the hospital by six to-morrow morning."

Kent nodded, his eyes still on the other's face. Then he said abruptly, " Why have you never got married, Cliff ? Was it perhaps because you were afraid of something like this ?"

He turned and went abruptly back into his office, leaving Clifford staring sombrely at blank polished panels.

No, he told the wood silently. No, that wasn't the reason.

After a moment he turned on his heel and walked away.

IV.

The shrilling of the bedside phone roused Clifford from the last stages of a comfortable night's rest. Thinking at first that it would be the call he had ordered to wake him in time to reach the hospital, he stretched languidly. He had been asleep since nine last night, and he felt enormously better.

But as he turned in the bed, his eye was caught by the luminous dial of the night clock, and he started. It was only half past three— much too early for his own call. Expecting an emergency, he reached hastily for the receiver.

It was an emergency, but not of the kind he had been looking for.

" Clifford here," he said, fully awake now.

" This is Ron Kent," his caller announced in a dead voice. " Listen, Cliff, the police have just told me that someone broke into the lab block tonight, knocked out Jezzard, who was on duty in the culture room, smashed up all the specimens, and wrecked the K39 series beyond recovery. They've got a description of the man out of Jezzard, and it sounds like this man Borghum who was at my offices this afternoon. Jezzard's got hold of the idea that he's trying to prevent us using chrysomycetin against the Plague."

" Good Lord ! " said Clifford, sitting upright.

" God, it's terrible, Cliff ! All our work gone to hell. Look, the reason I called you is that I can't get hold of my receptionist, Marjory,

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who's the only other person who saw Borghum and can confirm my description. The police say our warning system doesn't appear to have been tampered with, and they want to know if he actually did leave the building, or whether he hid inside until midnight and then got away after the alarms were turned off to let the police in."

"I saw him leave," said Clifford. "He might have come back. Tell you what—I don't have to be on duty till six. Would you like me to come down and make a statement?"

"Would you really?" The gratitude in Kent's voice was almost pathetic. "If I can get someone to confirm my identification, the police say they'll raise a warrant for him. We've had an Assistant Commissioner out of bed, and he's been raising Cain—seems he lost his son to the plague a few days ago—"

Kent's voice was on the edge of breaking, and Clifford interrupted reassuringly. "Don't worry, Ron. I'll be down just as soon as I can."

He rang off and threw back the bedclothes. He did not bother to dress properly, but pulled on slacks and a jersey and ran downstairs to fetch his car from the garage. The traffic at night was light in this part of town; he passed a few taxis cruising on the look-out for fares, and once he saw a police patrol car, but he flashed his DOCTOR sign at them and they did not stop him for exceeding the speed limit. Otherwise the streets were deserted until he reached Kent Pharmaceuticals. Here there was chaos.

He recognised a lie detector squad unloading their equipment from a van; someone was assembling a Bloodhound—an electronic tracking device—on the pavement, by the light of a portable searchlamp; and there were four patrol cars near the entrance. He recognised Kent's car parked beyond them.

At the gate a constable flagged him down, and he explained his presence and was waved on. He pulled up and got out.

In the reception hall he found Kent standing by the door of his office, and called out to him.

"Thank God you made it," said Kent fervently. "Come in here."

"In here" was his own office. There were five people present: Spencer and Jezzard he knew—the latter looked sullen and defiant, and there was a bruise on his jaw; and Clifford guessed that he had propounded his theory of sabotage and found it meet with a cold reception. There were also the two constables putting the finishing touches to the lie detector on the desk, and a detective sergeant holding a portable tape recorder.

"Is this Dr. Clifford?" he inquired of Kent, and on receiving a nod, went on, "Would you sit down, doctor? We shall be ready to take statements in a moment."

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The constables asked Jezzard to take his place at the lie detector, and pressed suction cup terminals like those Clifford was used to on an electroencephalograph against his wrists, temples and palms.

"All right, Mr. Jezzard," said the sergeant. "Please tell us what happened." He clicked the switch on his recorder.

With the air of someone explaining the fundamentals of arithmetic to a backward child, Jezzard began to speak in a low tone. He had been on the point of calling Spencer, he told them, who was sharing the overnight watch in the culture room with him, and who was to be woken at midnight for his spell of duty. He had gone to the airlock to find it already cycling, and thinking that Spencer had got up by himself, had stood back. Instead of Spencer, however, a stranger had appeared in the doorway, and on seeing Jezzard had knocked him out without more than a few seconds' hesitation and before he, Jezzard, could call for help. He had not recovered until half an hour later, when Spencer had come to see why he had not been called at midnight and had found him lying there. When they checked to see if any damage had been done, they discovered that the intruder had apparently operated all the handling mechanisms at random and had thrown the culture dishes in the sealed room on the floor, breaking them and ruining their value.

Kent shook his head slowly. "It's such a *senseless* crime!" he said savagely.

Jezzard seemed to be on the point of making a remark in pursuance of his deliberate infection theory, and then compressed his lips and thought better of it.

Spencer had little to add, except that he described the chaos more accurately and lamented the loss of the chrysomycetin—Clifford began to understand just how effective the unknown's act could be if it were sabotage.

Then Kent made his deposition about Borghum, and at last Clifford took his place and looked expectantly at the sergeant.

"I believe you saw someone leave the building when you called to see Mr. Kent this evening?" said the policeman.

"That's right. It would have been about four-thirty. I came to express my sympathy to Mr. Kent over the loss of his wife."

The sergeant glanced up. "I didn't know about that," he said. "I'm sorry, Mr. Kent."

Kent muttered and turned away.

"Can you describe this man you saw leaving?"

"He was about fifty, I should say. His hair was black, going grey at the temples and nape. He was about six foot two or three tall, with a dark complexion and a pronounced hook to his nose. He might be Arabic or Jewish. He bore himself with a military air."

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The sergeant looked satisfied. "That certainly seems to bear out our ideas," he said. "But did you actually see him leave?"

"I saw him walk out of the hall, yes. And when I left myself a car which had been parked next to mine was no longer there."

"Can you describe the car?"

"Yes, it was a new Hunter convertible with rotors and stub wings retracted, in black and red. I think the registration mark began with 9G, but I'm not sure."

The sergeant looked at the men on the lie detector, and they nodded in unison. One of them said, "All correct, sergeant. It looks as if this Borghum is our man."

"Good. Get on to the Gloucestershire branch and find out if he really does come from Balmforth Latimer, and if he does to find his home and arrest him when he gets back, if he isn't already there. He should be by now if he went straight there."

"Shouldn't we wait for a check with the Bloodhound?" suggested the constable tentatively.

"Take too long. By the time they've sorted out all the spoors in the building he could be out of the country."

"But surely he can't have gone straight back?" said Kent suddenly. "You said he must have lurked in the building until after you arrived."

"We daren't overlook any possibilities, sir. I know the system of alarms you have here, and they're as near perfect as any in use, and they don't show signs of tampering. But *someone* got in, and it certainly looks like Borghum. Excuse me, gentlemen." The sergeant suddenly appeared to remember that his tape recorder was still running, and bent to cut it off.

Outside in the hall again, Clifford turned to Kent, who was worriedly gazing at the small procession of detectives going to and from the lab block. "What's all this about your alarm system?" he demanded.

Kent did not look at him. "This is a danger area," he said. "We aren't so much concerned with safeguarding our property as with preventing some damned fool from getting in and infecting himself with one of our cultures. The perimeter is covered by an electric eye network which is turned on whenever the day shift moves out. There are also infra-red detectors which map movement of any warm object within the grounds. In addition to setting off alarms in the culture room—someone's always on duty there—they ought to alter the readings on the paper tapes connected to the circuit. The tapes are driven by clockwork, so that even if someone shorted out the alarms, a blank space should be left on the tape by the removal of the pens. The record shows a completely unbroken line.

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" What it boils down to is that somehow this man got in without crossing the perimeter, burrowing from underground or dropping from the sky. And the only warm bodies shown on the tapes were in the culture room and the room where Spencer was asleep. It's not only that that's impossible—it's senseless !"

" I think so too," Clifford told him. " If I hadn't seen the lie detector confirm what Jezzard said, I could imagine him wrecking the lab himself to support his idea of this afternoon—yesterday afternoon, rather."

" You think he did ?" Kent looked at him sharply.

" I didn't say that. But you left medical school before psychology year, didn't you, Ron ? It's a pity. Jezzard is a thoroughly unstable character. He doesn't regret the damage done to your culture room—not basically. He believes it was inevitable, and only kicks himself for not recognising that it would happen. That's an insane computation. It was neither foreseeable nor avoidable. If you take my advice, you'll have him examined. Who's your company psychiatrist?"

" A man called Chenelly." Kent was staring now. " Do you really mean that, Cliff ?"

" I really do. I think he's apt to become more of a liability than a help any time now. He's going to break down under the strain. And I for one don't want to be around when it happens."

" Thanks for the warning," said Kent soberly. " I'll do as you say."

" That's good." Clifford shot his wrist out of his jersey to look at his watch and found that he had forgotten to put it on when he left home in such a hurry. " What's the time, Ron ?"

" Twenty to six."

" I must run, then. I mustn't be late at the hospital. I'll see you later." He broke away and departed at a run.

V.

He was thinking over that dialogue while he ate his lunch, snatched hastily in the house surgeon's room at the hospital. There had been thirty-six new admissions in the course of the morning—thirty-five of them Plague and one appendicitis. The Plague situation was rapidly approaching saturation point. If W.H.O. didn't move in some trouble-shooters, there just wouldn't be enough doctors in Britain to cope with the rush.

But he found himself less worried by that, which would affect himself, than by the problem he knew Kent was having to face—how a man had got into the burglar-proof premises of his firm. He remembered suddenly that the reason for it was the conversation he had had

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with Buehl the day before. He would have been reminded earlier if they hadn't shifted him out of the main ward into the convalescent section.

A matter transmitter, that was it. It seemed like the only possible explanation of Borghum's entry. Nonetheless it was fantastic. Matter transmitters belonged to the future, not to an age in which spaceships still relied on fallible rockets and long periods of coasting to drift them to Mars or the Moon.

Or did they?

He pushed aside his paper plate, still half full of the tasteless stew which was the best they had been able to provide for lunch—apparently about half the staff of the meat distribution centre at Smithfield had gone down with Plague, and the health officers had banned delivery of what might be infected food.

"Sister!" he called out, and she answered him from the room next door. "Where did they put that man Buehl? The one I said could be moved last night?"

"Ward 29, I think," she called back. "Did you want to see him?"

"I'm just going down to see how he is."

He left the office and walked briskly down the passage. Buehl had said that he was going to check the math of this fellow Wiseman. He wondered if they had managed to find him the computer he had asked for.

Apparently they had, for when he entered Ward 29, he found the spaceman figuring busily on an already closely written scratchpad, and punching equations by touch on the keyboard of a small wheeled calculator beside his bed. He looked up on hearing Clifford approach, and broke into a grin.

"Hullo, doc!" he said. "Come to make sure I won't trouble you again?"

Clifford forced a smile at the rather morbid joke. He shook his head. "I'm afraid not," he replied. "Do you remember telling me about this matter transmitter of Wiseman's yesterday? You said you were going to check the math."

"That's right. I am. I had a hard job getting to sleep last night. The nurse wouldn't let me stay up to finish the equation I was working on, so I had to run it in my head, and believe me my grey cells are no match for a machine." He hunted for a sheet of paper somewhere among the pile on the blankets.

"Does it work?"

Buehl shook his head emphatically. "Oh, I can't find anything wrong with the idea. It *would* work—but we just can't do the things he wants us to."

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He settled himself more comfortably in the bed. "You know, it's like the problem of the marble. Fifty or sixty years ago, Banach and Tarski proved that you could take a marble to pieces—five pieces, I think—and re-assemble them to form a globe as big as the Earth. Conversely, you could pack the Earth, properly divided, into a space the size of a marble. It's sound enough reasoning. The only hitch is you just plain can't do it."

He rapped the top of the calculator with the stylus he had in his hand. "Same thing applies here. Wiseman's quite right in saying that if you could find two identical places and force them to stay that way, something introduced into one would appear in the other, and if you could cut the power keeping them identical at the right moment, you could make it stay there. What he can't tell us is how to create two identical locations. He wants a perfect square wave as a start, if I follow him—"

The P.A. speaker in the corner of the ward beeped and cleared its throat. "Dr. Clifford, please. Will Dr. Clifford come to the house surgeon's office?" It clicked off.

Clifford muttered a few ripe curses under his breath. "So at the present moment at any rate no one could build a matter transmitter?"

Buehl grinned and shook his head. "What do you want one for, anyway? To save you walking back to your office?"

"No," said Clifford. "I'm just trying to solve a burglary."

"Well, I can tell you this straight, doc," said Buehl with mock seriousness. "If anyone had a matter transmitter right now, it wouldn't be a burglar. Someone that clever would choose a less risky kind of occupation—like mine."

Making his way back to his office, Clifford was angry with himself for having considered the idea seriously. He determinedly reminded himself that there must be a rational every-day explanation, and if anyone found it it would be the police.

It turned out to be the police who wanted him. It was a constable whom he vaguely remembered seeing that morning at Kent's. As he invited the visitor into his office, he caught a surprised look on the face of the ward sister. The sudden and continued interest of the law in him was probably the major topic of conversation in the nurses' quarters.

He settled behind the desk, tossed the plate of now-cold stew into a disposer, and said, "Yes, officer?"

"Farquhar's the name, sir. I've been told to come and advise you that we checked on this man Borghum, who was suspected of the business at Kent Pharmaceuticals last night," the constable stated.

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"Was? You mean he's been cleared?"

"Yes. When the Gloucester branch visited his home this morning, they found that he returned home from London at eight o'clock last night. They have lie detector confirmation from three witnesses that he was still there at a quarter to twelve. He couldn't possibly have made the trip from there to London in the time."

"Except—" began Clifford, and immediately caught himself. What was this ridiculous obsession with the idea of a matter transmitter? It sprang from a resentment against the destruction of the culture room at Kent's, and in turn that came from the ruining of the one thing which showed a chance of beating the Plague, and then—from the death of Leila Kent. He shut a clamp down on that memory.

"Yes, sir? Except what?" Farquhar's bright eyes made him feel like a specimen under a microscope.

"Nothing," he muttered. "A silly idea I had."

"Well," the constable went on, dismissing it. "We just thought we should notify you in case you mentioned it to anyone. I understand Mr. Borghum has threatened a slander action against anyone who puts it about that he was responsible."

"Very well, officer. I won't talk about it."

"Thank you, sir. That's all." The other rose to go, but Clifford stopped him.

"I don't suppose you'd know, would you, what's being done about tracing the carrier who may be spreading the Plague without knowing it? Mr. Jezzard suggested the possibility yesterday."

Farquhar shook his head. "That's not in my line, sir. I'm with the lie detector and electronics squad. Anything to do with tracing would be handled by Missing Persons."

"Yes, I know Inspector Jaffry in that section. You're with electronics, you say? Didn't I see a Bloodhound being brought to Kent Pharmaceuticals this morning?"

The policeman looked uncomfortable. "Yes, sir, you might have."

"Did it find anything?"

"Er—in confidence, yes. It's rather disturbing. We found the characteristic aroma of Mr. Borghum in Mr. Kent's office and also in the laboratory. But though the Bloodhound followed the trail which was made much earlier from the pavement to and from the office it couldn't detect the more recent spoor in the laboratory further than to a spot in the passage just outside the airlock."

He had the air of a person confessing that he had just discovered an untenable proposition in his religious beliefs. To him, Clifford realised, the failure of an electronic device was almost that bad.

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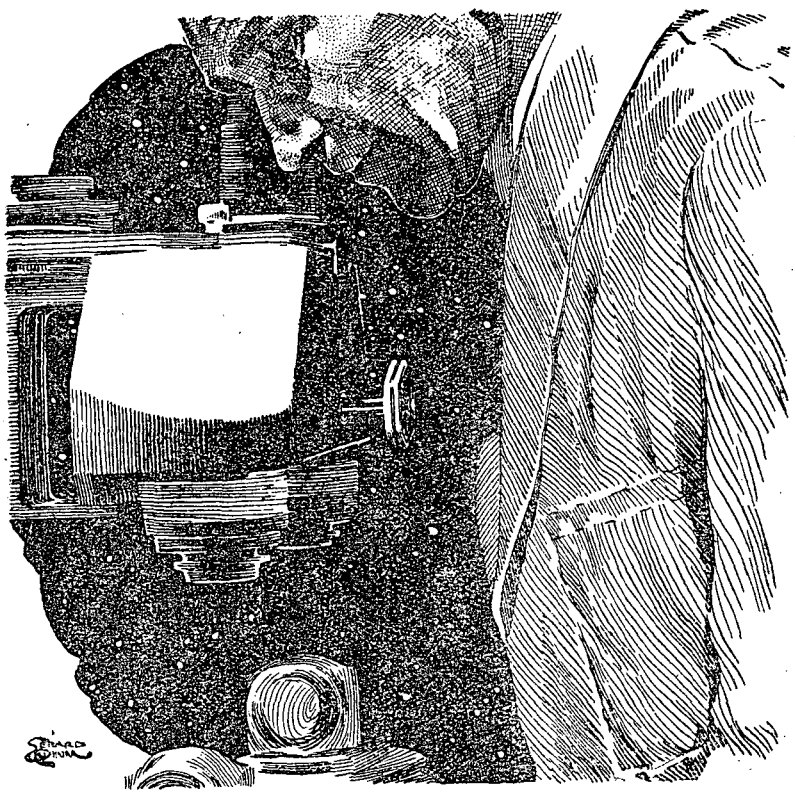

"You mean it simply stopped—vanished into thin air?" he inquired wonderingly.

"Apparently, sir," nodded Farquhar. He added hastily, "Of course, you know that the Bloodhound is still not regarded as evidence in a court of law, just as the lie detector used not to be."

Clifford disregarded the last remark. "Well, I'll be—" he said musingly. "Thank you, officer. You've been very helpful."

"Thank *you*, sir," insisted the constable, plainly feeling that something had gone obscurely wrong somewhere. He went out.

Feeling slightly blank himself, Clifford sat for a while after the door closed behind Farquhar, staring at the wall. He had come near to

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letting slip the idea of a matter transmitter, which he had earlier dismissed as stupid. Since it was the only explanation which fitted the facts, one of the facts must be wrong. Probably it would be found that the so-perfect electronic devices of the 'burglar-proof' Kent building were as fallible as the Bloodhound.

He roused himself as an idea struck him, and picked up the telephone to call Kent.

"This is Cliff," he said when he was answered. "Ron, is anyone else testing chrysomycetin against the Plague?"

"No one else has it," said Kent shortly. "What was destroyed last night represented practically all we have. We're driving ourselves up the wall trying to breed the mould which secretes it."

"I see. Is there any other firm which is having such success with its work?"

"Not to my knowledge. We'd have been informed if there were. There isn't a manufacturer in the country who isn't ready to go into mass production of anything that looks as if it'll knock out the Plague."

His voice suddenly sharpened. "Why do you ask, anyway?"

"I just wondered if anyone else was due for a visit like the one you had last night."

"For their sakes, I hope not," said Kent grimly. "It's heart-breaking, Cliff. We've had to start right from scratch."

"It's even worse for me, remember," said Clifford. "I have to sit and watch people die." A part of his mind which had been submerged for many years suddenly cried out; it had been aroused when Kent asked why he had never married. Now, within the space of a second, he lost all the protective barriers he had set up against it and admitted to himself that he had been in love with Leila Kent.

Through a rush of black sorrow he heard Kent say something, but he did not catch the words and asked him to say them again.

"You were right about Jezzard," he heard. For a second he could not place the name.

"How do you mean?" he said at length.

"You've heard the news this morning, I suppose?"

"Not a chance. This lunch-hour is my first free time. People are being admitted every few minutes with fresh cases of Plague."

"They've got it on the Continent and in America. There are a dozen cases in Paris and Berlin, and New York had put in a claim to W.H.O. even before our delegation got there this morning. If they're going to declare anywhere an area of menace, they'll have to make it the planet itself."

"What has this to do with Jezzard?"

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" I told him this, and he declared it was a false alarm to distract attention from the attack on Britain. I had to send for Chenelly, and Jezzard turned violent and had to be put under sedation. It may take a month or more to cure him."

" I thought he was headed for a nervous breakdown," said Clifford sombrely. " I'm sorry you've lost his services."

Kent shrugged ; the sound of his jacket moving on his shoulders was audible over the phone. " What can we do ?" he asked emptily. " The strain gets everyone in the end. Chenelly isn't happy about Spencer, either ; he seems to have taken the wrecking of the culture room as a personal affront."

" That's almost worse. But we're having that kind of difficulty here, too. One of my nurses turned up this morning with an hysterical obsession about the Plague—thought she was going to catch it. I had to send her off duty."

There was a long silence. Eventually he said goodbye and dropped the receiver. There was nothing more to say—for the time being.

VI.

The fresh cases continued to pile in throughout the rest of the day. By four o'clock every available bed was full, and he spent twenty minutes ringing the other hospitals with which they had exchange agreements, only to find that none of them had foreseeable vacancies.

Finally he had to ring the Ministry of Health and obtain a ruling from a friend of his there that as a rule of thumb cases which seemed obviously on the mend should be sent home where possible. He had seen too many sudden relapses like Leila's (would he never get that out of his head: the beautiful, wasted face, the dark hair spread out on the pillow ?) to be entirely happy about it. Some of the apparent convalescents might be the one case in ten where nothing could save life. But it was best that could be done, for the flood continued.

When he finally got away, he was more exhausted even than the day before, and the next day promised to be worse—and the next—and the next. He snatched a meal and seven hours' sleep and came straight back, to be met with the most cheering news he had heard in days—the World Health Organisation had sent in a trouble-shooting team from the American Mid-West.

Their wagons, which he knew would have been driven ready-loaded straight on and straight off their six-engined globe-girdling transport aircraft, were being unpacked in the yard before the main entrance when he arrived back at four a.m.

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He spent the next two hours touring the wards with a group of soft-spoken coloured doctors and nurses, none of whom seemed to have realised the true nature of the Plague before. That was hardly surprising ; up to now they had managed to contain it within the British Isles. He felt his companions would have paled if they had been able to as he described in dispassionate and accurate detail the course of this most unpredictable of diseases, but their mere presence was comforting. The implication of world-wide organisation behind the fight against disease was awe-inspiring. One had only to remember that six hours before these people had been whisked out of their regular beat in their own country, flown across the Atlantic and dropped straight into the middle of the worst-hit Plague area, and one saw how much the modern world could do against its most subtle enemies.

When he had finished his tour, they adjourned to the house surgeon's room for a cigarette. Looking around the group, he addressed their leader, a thin man called MacCafferty, with the scars of a gland operation prominent on his throat.

" Well, what do you think of it ?"

" Nasty," said the negro succinctly. " Why didn't you holler for help before ?"

Clifford shrugged. " It's only got really bad in the past week. You know it's spread to Europe and the States now ?"

" Do we not !" said the prettiest of the nurses, flicking ash into a tray on the desk. " You're lucky to have got us, I'm telling you. The next call after the one that fetched us was for Brooklyn, New York. They've just been hit with nearly two hundred cases in a day."

" That's not all," put in MacCafferty. " I have it unofficially that they've programmed a hundred teams for China and Russia. They've had it six weeks without telling anyone and lost almost a half million people. They don't seem to have noticed it before."

There was mild contempt in his voice. No, not contempt—half-hearted annoyance, as if to say, " What can you expect from those guys ?" It reminded Clifford of Jezzard, for some reason, and he stubbed his cigarette angrily.

He said, " Well, are you ready to go ?"

MacCafferty made a ring of his thumb and forefinger. " All set," he agreed.

Clifford's visions of day after day of hard and unremitting toil had been postponed for a while, at least. With the aid of their special equipment which kept rolling in all day, the W.H.O. team lightened the load on the back of the regular staff by almost half. By noon they were coping with the rush; by afternoon the first of the field hospitals

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had been set up in Hyde Park and St. James's Park, and delivery wagons co-opted by the police as emergency ambulances were filling them with patients. He found time to ring Kent in the course of the morning, and he was unexpectedly jubilant. A flying lab had put down at London Airport and was going over to the mass production of chrysomycetin with a brand-new forced breeding technique.

He even managed to read a newspaper, though that was far from reassuring. The editorial had been driven to seek comfort in the fact that so far no cases of Plague had been reported from Mars or the Moon. There was an article on the sterile remote handling equipment which was being used to load supply rockets for the bases in space until the danger was over.

The halcyon period lasted just twenty-four hours. Then there came two episodes right on top of one another—the fake W.H.O. team, and the wrecking of the flying lab.

The W.H.O. team—so called—turned up at a hospital in the Midlands, whose tired and overworked staff overlooked the fact that they had not been notified to expect anybody and joyfully accepted their aid. The team stayed there for just fifteen hours—long enough for the regular staff to re-organise so that for a while at least their presence was indispensable. Then they vanished.

When the incredulous doctors discovered that they had really gone, the death rate for the hospital was the highest in Britain, and the town it served was the blackest spot on the Plague map.

The flying lab had received the entire remaining stock of Kent Pharmaceuticals' precious chrysomycetin moulds, to be put through the new forced-breeding process. Within twenty minutes of the stuff's arrival the aircraft caught fire and was burnt out. One of the attendant biologists was dragged back from the flames mumbling incoherently about there being a man in the culture compartment which he had just sealed off, but when firemen fought their way in they found nobody. What they did find was the shell of a phosphorous grenade.

Clifford heard about both episodes as he was dressing to go to the hospital, over the early morning radio news bulletin. Panicking, he rang his own office to confirm that his W.H.O. reliefs were not going to disappear into thin air. He came back from the phone with his mouth set in a grim line. Someone *must* be sabotaging the programme against the Plague, and whoever it was must be extremely afraid of chrysomycetin. But *who* was doing such a thing? And *why*?

The news bulletin had moved on to a report of Plague in Malaya and Indo-China, when the phone rang and he went back to answer it. It was an unfamiliar voice.

"Is that Dr. Clifford?"

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"Speaking. Who is that?"

"My name is Chenelly, doctor. I'm the company Psychiatrist to Kent Pharmaceuticals."

"Oh, yes. Ron Kent mentioned you to me."

"You were a friend of his, I believe,"-the tinny voice went on after a pause, and Clifford caught at the important word.

"Were? You mean he's—dead?"

"I'm afraid so, Dr. Clifford. Late last night."

"Oh, how awful . . . It was the Plague, of course."

"No, not the Plague. He committed suicide. He took poison." The voice sounded bitter and self-reproachful. "I blame myself for not seeing it coming, but I was so distracted by the case of Jezzard, who had just broken down completely, that I must have been blinded to the more serious possibility. He left a note addressed to you. The police took possession of it, of course, but—" apologetically "—I took the liberty of memorising it when it was shown to me. He said that the destruction of the chrysomycetin supplies proved to him that someone was deliberately spreading the Plague, and that he felt he could not go on if all his work was to be wasted. You were not to hold yourself to blame in any way."

Clifford listened in passionless silence.

"That was the gist of it, at any rate. I may say, doctor, that though I knew Kent was profoundly disturbed by the loss of his wife I had pegged him as too stable a personality to resort to suicide. I think we can discount the suggestion of a deliberate biological-warfare attack on us, which no doubt had its source in a distorted understanding of the—uh—Typhoid Mary hypothesis which Jezzard held."

Clifford hated doctors who insisted on carrying over their jargon into private conversation. He said acidly, "I don't think we can discount it, doctor. I happen to agree with it myself. Thank you for letting me know."

He hung up before Chenelly recovered from his amazement, and stood in bleak thought for a minute. Somewhere in the depths of his mind a cold intellectual hate began against the inhuman monsters who had taken from him first the woman who, all unknowingly, had prevented him from ever getting married, and now had added to their score his best and oldest friend. He felt unutterably, intolerably depressed.

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VII.

"Dr. Clifford!"

Clifford looked up from the draft chart on which he was trying to duplicate Jezzard's research into the sequence of response of the Plague bacterium from the hospital case records. "What is it, sister?" he said.

"You remember you asked us to let you know as soon as any of those unidentified patients came in? We've got another."

Clifford shuffled his papers together and got up from his desk. "Usual pattern?" he asked. "Unconscious—well dressed—money in his pocket and nothing else?"

The sister nodded. "This one was found in a train at Paddington half an hour ago. He looks far gone."

"I want to see him," said Clifford, making a decision. It was not a kindly one, but it had to be taken by someone, and he felt that he needed to be that someone.

He followed the sister into what had been the casualty reception unit until it too had had to be turned over to the rush of Plague-stricken victims, and they found MacCafferty bending over the form of a man with a characteristically wasted face breathing stertorously through his congested windpipe, sucking in oxygen that his lungs could no longer pass to his blood. The negro looked up at his approach.

"I don't get this, Cliff," he said wonderingly. "The guy must have been barely able to walk. He should have been hospitalised a couple of weeks ago."

Clifford examined the stranger swiftly. As he did so, he insisted to the sister, "He had absolutely no identification? What was he carrying?"

"Loose change, a couple of notes and a single ticket to London. Not even a handkerchief."

Clifford took a deep breath and made his decision irrevocable. "Right. I want you to ring the Missing Persons department at Scotland Yard and get hold of Inspector Jaffry—got that? Tell him that we have one of his mystery cases here, and he'd better come down right away if he's interested."

"What is this, Cliff?" MacCafferty demanded as the girl nodded and hurried away to phone.

"Think we can make him talk?" Clifford said obliquely.

MacCafferty looked down at the prostrate man. "We could, I suppose," he said doubtfully. "It'd take some doing—hypnosis, denial of bodily malfunction, drying out of the respiratory tract—or we could use artificial oxygenation of the blood. It'd cut his chances in half, though. I don't think we should risk it."

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His black eyes shifted and met Clifford's gaze squarely. "Cliff, what is this, anyway? You realise you're practically signing his death warrant if you force him awake?"

"Believe me, Mac, this is necessary," said Clifford sincerely. "I've handled more of these cases than you, and I know that we haven't one chance in a hundred of saving a man who's this far gone. Normally, that hundredth chance would be worth banking on. This time it isn't. I've sent for Inspector Jaffry because it was he who first suggested to me that these unidentified patients might be actually spreading the Plague. If we can wake this man long enough to find out who he is and where he comes from, it may mean we have the answer to the entire problem."

MacCafferty hesitated. "Cliff, I'm a doctor," he said finally. "In the ordinary way, I wouldn't consent even if it meant my own life in the balance. But I've heard about the burning of our flying lab, and the spoiling of the new antibiotic at your friend's place. I don't understand the Plague, and I'm afraid of it. I'll take your word that you know what you're doing, and if there's trouble—I'm with you."

"Thanks, Mac," said Clifford sincerely. "Let's go."

They moved the stranger into the operating theatre for his revival. While they were setting up the hypnosis and denial equipment, Jaffry arrived, and Clifford took him aside and explained what they were going to do and the risk which was involved.

"You don't have to worry about risk," said Jaffry when he had finished. "We've accepted the sabotage theory in the flying lab case, and we're almost ready to agree to the deliberate infection idea. We're so understaffed because of illness that we had to call off the search for the other untraced victims, without finding out anything except that all of them seem to have come from roughly the same district."

The soft humming and clicking of the artificial lung, filling the stranger's body with aerated blood his own lungs could no longer supply, started in the background. "And that is—?" prompted Clifford.

"The neighbourhood of Gloucester. In fact, not too far from Balmforth Latimer, where the Plague began."

"I thought they might have," Clifford nodded. "But I daren't tell you what I suspect until we've had confirmation from this man—"

MacCafferty broke in. "Cliff, we're all set."

"All right," Clifford answered, and moved to the head of the operating table. They started by drying out and cleaning the bronchial tract so that he could at least breathe well enough to speak, even if he

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could not do his own refreshing of his blood. Meanwhile Clifford dosed the man's scalp with isocaine, mapped his skull sutures with an X-ray viewer while he was waiting for it to take hold, and then neatly cut the slits for the microprobes which he then inserted directly into the brain. Fifty years ago this would have been a major operation, this application of tiny electric currents to delude the patient into consciousness despite the reflex set up by his illness which had driven him to seek refuge in blankness.

They had been working for less than fifteen minutes when he found the responses he was looking for, and the man put out his tongue and licked his lips. Clifford leaned over anxiously ; the artificial stimulus they were applying was far from a cure—in fact, when it was removed his own body might have relaxed too far to pick up its old functions. He kept reminding himself of Ron and Leila Kent. In his way, this man might be a murderer.

He signalled the sister to step up the oxygen flow, and said urgently, " Can you hear me ?"

The man opened his eyes for a fraction of a second, took in the masked inverted face above his own and the bank of medical equipment beside his head. He gave a sudden choking gasp, shut his eyes again and set his jaw with a superhuman concentration.

Out of the corner of his eye Clifford saw Jaffry reach for the switch of his tape recorder and turn it on. He stared worriedly at the gauges on the denial machine. They showed that the stimulus was draining the man's reserves rapidly. Too rapidly.

In a burst of astonishment he recognised the characteristic withdrawal symptoms of suicide-intention.

MacCafferty followed his gaze to the dials, and turned a surprised brown face to Clifford. " I've heard of that among savages," he declared, " but I've never seen it before. The man's just willing himself to die !"

Clifford bit his lip. " Try neoscopolamine ?" he suggested. At MacCafferty's nod the sister crossed to the drugs rack, found a phial of the truth serum, charged a percutaneous syringe, and handed it to Clifford, who pressed it against the exposed shoulder of the man on the bed and let the trigger go. The effect was startling in its suddenness.

The man's lips writhed, and he spoke. They leaned closer to hear—gibberish.

" They have come ! Not get away . . . die ! Die! If they are here, now, we have lost, we must have failed, been beaten . . ." Then a burst of renewed determination. " But they won't stop me ! I'll die !"

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The man's accent was curiously soft. He tended to lisp his s's, and all the shorter vowels were alike ; he said *uv* for *have*, and *uh* for *are*.

Worried glances flashed around the table. Jaffry set the mike of his recorder closer to the writhing mouth.

"How about that, Mac ?" said Clifford. "Is it too deep ?"

"Much too deep to wipe out in the time we have," said MacCafferty. "He's failing fast."

Clifford licked his lips, and bent down again. "Who are you ?" he said insistently.

"What ?" Then the serum overcame the man's efforts to hold it in, and he said in a thin voice, "Syon Famateus."

"Where are you from ?"

"From ? From—bomb—tom-tom——"

"He's trying to escape into echolalic compulsion," said MacCafferty in a low voice. "He's horribly afraid of something."

"Where are you from ?" said Jaffry suddenly in a fierce, commanding voice. It worked ; the man's face relaxed.

"I'm Syon Famateus," he said. "Come f'om Pudalla—Tau City." It sounded like Tau City. "Um with uh Sci'ntific D'vis'n uh th' Adjustment Corps."

Clifford gave a despairing glance at the gauges. The man was very near his self-imposed end.

Jaffry shook his head slowly. "Is he insane ?" he said softly. "What he's saying is nonsense."

Clifford shrugged. He spoke again in an urgent tone. "Syon Famateus ! Tell us why you are here !"

"Um s'posed t' disseminate—" incomprehensible word "—until uh die. If uh'm cot by th'—" again incomprehensible "—uh'm to die ut once." Alarm broke out in the softly accented voice. "Uh've bin cot ! Uh *must*—"

He gave a sudden twitch, and the gauges on the denial machine began to climb slowly down towards zero.

He was dead.

White-faced, Clifford began mechanically to remove the microprobes, while MacCafferty shook his head in wonder. "I've never seen anything like it !" he repeated. "He just wanted to die."

"What did all that mean—if anything ?" demanded Jaffry. "Was he in delirium ?"

Clifford motioned to the sister, and the sound of the artificial lung died away. "No, not delirium," he said. "He was under a hypnotic

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compulsion so deep that neoscop only slightly neutralised it. It was masking the normal fear of death, which accounts for his willing himself into oblivion. But it was also helped by another—and stronger—fear."

"But what kind of fear can be stronger than the fear of death?" Jaffry insisted.

"I can think of several situations in which death would be a release. Famateus was afraid of being caught by someone—or something. MacCafferty will confirm that."

The negro nodded. "Even so, Cliff, I couldn't make sense out of what he said. There's no place called Tau City that I've ever heard of."

"Not Tau *City*," said Clifford. "He just pronounced it that way. He meant Tau *Ceti*—the star."

"A star? But—" Jaffry hunched forward. "Doctor, I'm afraid I don't understand. If you say he wasn't raving, I have to accept your expert opinion. From what I know about denial technique, the microprobes by-pass overlaid compulsion and stimulate the consciousness directly. I'll give you that. But—well, say he consciously *believed* he was from there, while actually he had been misled—" He was grasping at straws, and it sounded as if he knew it.

Clifford raised his voice. "Sister, is that man Buehl still in the hospital, or has he been sent home?"

"He's still here. He hadn't any place in London he could go to, to rest up."

"Would you bring him here, please?" He turned back to the two men. "Now listen. You heard Syon Famateus say he was under orders to disseminate something. I believe that something is the Plague. I think we've not only found our Typhoid Mary—rather, one of hundreds of them. I think we've also discovered where the Plague comes from."

Jaffry muttered, "Invasion from the stars? We haven't even been to Alpha Centauri yet, let alone this other one."

"*Yet*," said Clifford pointedly, and this time it sank in.

"Cliff, you're crazy!" said MacCafferty with energy. "Even if there were any evidence that time travel is possible, what conceivable motive could the future have for infecting its past, and probably changing it?"

"That's the one point on which I have no ideas at all," said Clifford. "But I suspect we *do* have evidence that it is possible to travel in time." The door opened, and Buehl came in. His jaw dropped as he took in the scene.

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"Doc, what do you want with me?" he demanded, seeming half afraid of the dead man and the medical machinery.

"We won't keep you long," said Clifford wearily. "I just need an expert on higher mathematics. Look, Buehl—" He raised a hand to forestall the rising torrent of questions. "You can ask what's happened later. I want to know if that matter transmitter we were talking about could be adapted for time travel."

There was a long and pregnant silence. Finally Buehl said in a puzzled tone, "Well, of course it could, doc. It's time travel in itself. When you go instantly from one place to another, you have to travel backwards in time at exactly the right rate to balance out your normal expenditure of time in covering the distance at the speed of light. I guess you could jigger the machinery so that you arrived at a congruent place which no longer existed. But I thought I told you, doc—there's no way to make it work."

"But will there be? One day?"

"Oh, very likely."

"There you have it, Jaffry," said Clifford, turning back. "Some time in the future. Listen. When your Bloodhound tried to trace Borghum's spoor at Kent Pharmaceuticals, it followed the old track out of the building, but the newer one, which should have been that much easier to follow, stopped short by the airlock of the culture room. It was as if Borghum had walked into thin air. I suggest he did. I suggest that his afternoon visit was simply to discover the best place to aim for when he came to smash the lab. Of course he was at home twenty minutes before the crime. He could afford to be. He spent no time on the journey."

"But damn it—" expostulated Jaffry.

"Let me finish! We've run up against dead ends with all other attempted explanations. This one fits all the facts. Now if these people are spreading Plague deliberately, they are afraid of chrysomycetin, because alone of our antibiotics it affects all the types of Plague germ. I'd suggest laying a trap for this mysterious Borghum. Suppose we do this . . ."

VIII.

The culture rooms at Barnaby's were far less modern than those at Kent Pharmaceuticals, but that did not matter. They were good enough to support the well-publicised statement that they were being used to make chrysomycetin, although of course they weren't—there still was not enough of the rare and finicky mould to permit mass production.

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Clifford stared with aching eyes at the dark mass of the sealed door dividing him from the culture room proper. His hand was clenched around the butt of a pistol. Beside him, Farquhar, the constable from the electronics devision, kept his eyes fixed on the unwavering luminous needle of an infra-red detector which would instantly warn them of the materialisation of a human being in the next room. Throughout the building there were men waiting with guns and anaesthetic gas sprays at the ready. Or supposedly at the ready. They had agreed to post the guard for three nights, and last night no one had come. Now the watchers, who yesterday had been merely wondering, would be growing incredulous, and saying, " The hell with it !"

But they would still be alert, because they knew that however fantastic the suspicion was, it still remained the only one which fitted.

Clifford looked at his watch. It was ten past two in the morning. He wondered for a moment whether perhaps what remained of Ron and Leila Kent might not be aware of what was being done. He tried not to think of it as personal, as revenge; it was necessary to save millions of lives, in all probability. But he could not quite drown out the cold hatred in his mind.

There was a sudden gasp from Farquhar, and his hand slapped at the master lighting switch. Clifford responded with reflex speed and charged at the door before him, which had been convincingly jiggered to look as if it were tight sealed, when in fact it would swing wide at a touch.

In the centre of the culture room, illuminated by the pitiless glare of a dozen searchlamps, a tall man with black hair going grey threw up his arm to shield his eyes from the sudden light, forced himself to look about him wildly, and made as if to run.

But there was nowhere to run to. The other doors of the lab had opened, and men with guns and gas sprays ringed him closely. " He materialised there !" said the one who held a Bloodhound extension in his hand, pointing to a spot on the bare floor, and one of his companions set down where he indicated a jury-rigged radio chassis, set to oscillate instead of receiving, which, theory stated, ought to prevent the operation of a matter transmitter.

Slowly, under the cold, merciless gaze of his ambushers, Borghum raised his hands.

" Well ?" said Clifford sourly. " Aren't you going to will yourself to death ?"

Borghum shook his head. " We only resort to that when we are trapped by the Dorinni." It was the same word that Famateus had used. " How did you know of that ? I suppose you tortured one of my agents."

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Clifford ignored the last remark. By tacit consent he seemed to be the spokesman, now that his fantastic idea had been so dramatically confirmed. "Where—and *when*—are you from?"

"I come from here on Earth. About A.D. 2620 on your scale of reckoning. How did you guess that?"

Again Clifford ignored the question. "Are you responsible for the Plague?"

"In a way. We spread the infection to this period of time."

There was a menacing growl from the circle of guards, and some of them took half a step forward. "Why?" demanded Clifford pleadingly "In God's name, *why*?"

Borghum hesitated, looked at the guns trained on him, and answered slowly, "Tell me one thing first. Is the Plague, as you call it, now out of control beyond this age's ability to eliminate it?"

"Yes, damn you!" said Clifford savagely.

Incredibly, the news pleased Borghum. He relaxed. "My task is done," he said simply. "Allow me to introduce myself. I am Colonel-General Borghum, and I am the commanding officer of the Corps of Temporal Adjustment of the Army of Man." He uttered the words with a kind of impressive dignity, and in spite of himself Clifford lowered his gun.

"So that's it!" he said. "I knew you were a military man, but I thought of you as retired—" He stiffened, remembering. "Answer my question!"

"Since I would lose nothing now even if you were to kill me, I need not do so. But I will.

"I see you understand the principle of the matter transmitter, or at least you knew how to cut off my way of escape." He nodded at the oscillator on the floor, its valves glowing. "I did not think it had been invented at this time. However, no matter. In the age from which I come we have established a chain of such transmitters linking more than a dozen stars where we have human colonies. In the course of further exploration, we made contact with an alien race. We call them the Dorinni.

"The Dorinni, without warning, attacked us, and since they had the advantage of surprise they had driven us back to our inner ring of defence before we managed to fight the onslaught. When we did begin to strike back, it became at once obvious that we were going to lose.

"The Dorinni did not have the matter transmitter, which was our one advantage, and we carefully prevented any from falling into their hands. It was to prevent them obtaining the secret from prisoners that we established the hypnotic compulsion to death in our agents.

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I do not understand how you came to learn of this—possibly the man who died under your hands was deranged by the Plague and believed he had been captured by the enemy.

" It was as a last resort—we hoped—that we established my command, the Corps of Temporal Adjustment, and utilised the time-travelling aspect of the transmitter to enable us to anticipate and defeat Dorinni attacks. Time is not fixed. That is something I believe you already know. But we had never before dared to investigate this property of our machine, because theory showed that even the most minor alteration would have unguessable consequences. I have, of course, no knowledge of the course the war was taking prior to our interference. I have merely assumed that we were desperate in that alternative world because the Corps which I command exists.

" For a while we turned the tide, but the final blow was too subtle and deadly for us. You must know that in my time human adaptation had been so advanced that the science of medicine had begun to atrophy. Instead of attempting to curb our diseases, we had made ourselves immune so that we could live with them. A disease which is fatal to you—say cholera, which I think you still have—causes me no more inconvenience than a common cold. The Dorinni found out this fact, and they created the Plague.

" Now as you will know the Plague mutates at random. No two cases of it are alike. The only certainty we could find about it was that it would kill. We could not treat it, you see. We no longer had the facilities. In any event we could never have treated half the human race. Before the first case of it had incubated, the infection had already been spread through our instantaneous transmitters to every world on which there were men. And so, in the hour of impending victory, we were beaten. There were no men to fill our attacking ships, or to service the power stations supplying our armour force-fields.

" If we had been able to discover the way in which the first infection was brought to us, we could have altered the event and gained a breathing space. Even so, the Dorinni would still have possessed the weapon. It was heart-breaking to discover from interrogation of prisoners that the Plague was the enemy's last throw. They could not produce such another weapon.

" There was only one thing to be done, with the human race dying about us like flies. I ordered my men, including and especially those with Plague, to join me in the furthest and most radical—and most dangerous—time adjustment yet.

" You see, we had to plant the Plague at a time when it would spread and take root as other diseases had done. It is unpredictable. It would itself ensure the survival of medical science until the day

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when we met the Dorinni—and that meeting will inevitably again take place, for at this point in time nothing has yet been changed for the aliens, and up to the instant of contact all will go for them as it has before. And so we did what we did, and when the Dorinni's last chance fails because the human race is already used to the Plague, we will have won the war we in my time had all but lost."

His voice took on a note of pleading. "We were desperate, remember that! It was hard for us to go out deliberately into this age, even when the Plague had almost put an end to us, and willingly infect others. But we had to do it. In this time you can save all but one in ten; in my time all but that one in ten was dying."

His manner and his story were alike persuasive, and the disbelieving men around him had lowered their guns perforce. "But why did you destroy our supply of chrysomycetin?" demanded Clifford. "Why did you stop us curing the rest?"

Borghum looked suddenly weary. "Until the Plague got out of control, there was the risk that it would die out and be forgotten. You must *live* with it! In every generation some must die, until only immunes are left, until it afflicts you as little as a coryza virus."

There was a slow sigh from the man standing over the oscillator.

"Why Britain first?" pressed Clifford, hunting for flaws in this consistent story under the driving anger of his hatred.

"The highest population density on Earth to-day," said Borghum. "We needed to spread it as far and as fast as possible, even before my agents set up the matter transmitters which have now carried sick men all over the planet to reinforce the disease. We were afraid that *this* might happen."

He gestured to include all the guards about him, and involuntarily their eyes followed the indicated direction of the movement, distracting their attention for a second.

In that second, Borghum moved.

His leap carried him across the room. His outstretched foot descended on the fragile tubes of the oscillator, smashing them to powder. There was a blue flash as the chassis shorted and burnt out. The way of escape was open again, and he took it.

There was confusion. White-faced, Clifford charged through the milling men and ran out of the lab down the passage to the point where they had set up a telephone on a tie-line to the police at Balmforth Latimer. He tore the receiver from the hands of the operator squatting beside it, knowing even as he shouted into the instrument that his effort was empty. Borghum was back even as he spoke.

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Farquhar and others from the laboratory crowded about him and watched his face as it slowly went dead and blank. At last he said, "Yes, I see. Yes. Thank you."

He stood for a while with the receiver dangling from his outstretched hand, until someone demanded fiercely, "What did they *say*?"

"The house Borghum has been using," Clifford told him numbly, "has just been blown up."

There was a deathly silence.

Hesitantly, Farquhar broke it. "Sir, do you believe him? Do you believe what he said about the Plague being necessary?"

Do I? wondered Clifford greyly. Do I? Do Ron and Leila Kent —wherever they may be—understand that they had to die, and would they have done so willingly if they knew?

He roused himself and looked at the anxious men about him. "I don't know," he said. "But like it or not, we're stuck with it."

He pushed through the others and walked, head bent, out into the cool air. The sounds of the city fighting its insidious enemy came to him where he stood: the howl of ambulance sirens, the whir of helicopters on errands of mercy, the muted multiple hum of many turbines bringing in food and necessaries for those who could no longer help themselves.

He raised his head. Out there, in the darkness, men were dying. And up there, among the stars—

The enemy was waiting.

It did not know that here, now, by Clifford and by MacCafferty and a million others, it was already being beaten.

John Brunner.

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THE HOT POTATO

The universe in which mankind exists does not contain any mechanism for dealing out fair-play, or justice, but sometimes a certain amount of justice happens by accident

By Alan Barclay

Illustrated by WHITE

The alien spaceship stood, alone, empty, with its hatch open, not very far from a native community on Mars. How it came there or where the Jacko occupants had gone to was a prevailing mystery—perhaps they had committed suicide. Whatever their final destination the ring of human guards surrounding the ship at a respectable mile distance would see that they didn't get back inside the craft. For that matter no human or Martian was allowed inside the cordon either—for the Jacko ship had become like the proverbial baked potato at a picnic, too hot to handle for the time being.

The military unit guarding the alien ship was commanded by Captain Nicholls, who had been in the Space Navy at one time, but was transferred out for the sufficient but non-heroic reason that his stomach just would not adapt itself to no-gravity conditions. So now he was serving with the ground contingent on Mars. He would probably stay on Mars all his life and eventually die there. He was one of

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those slouching, easy-mannered officers who have a talent for command and who run their organisation efficiently without apparently exerting themselves.

His headquarters was a plastic tent, which was standard military equipment on Mars. It was airtight and its interior could be maintained at earth-normal pressure by means of a little air-pump.

Captain Nicholls lay on his bed at one side of this tent, long legs crossed and arms folded behind his head. At the other side of the tent Joe his radio-man squatted in front of communications equipment. Since contact with parties of his men as well as with the rest of Mars was maintained almost entirely by radio, Captain Nicholls and Joe were constantly together. In fact, they were close friends.

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Although Captain Nicholls was lying supine he was nevertheless busy with his morning's routine work. With his eyes closed, visualising the lay-out of the company, he put out queries.

"Joe," he said to the ceiling, "get Sergeant Jackson to report whether he has changed guard round the ship. Ask him to repeat his orders about allowing no-one to approach."

Joe did this, and made a number of other routine checks.

"Now," Nicholls said, "I must send in a report about this affair . . . Can you get North Pole Base with that talking machine of yours?"

"You know I can't," Joe grunted. "You've asked me that a dozen times, and I've told you. North Pole Base is round the curve of this rotten little planet, and we've got no decent ionosphere to bounce the waves off."

"I remember. Well then, call the civilian base at Lancaster, send them the message, and ask them to pass it on."

"I can do that," Joe told him, "but they'll muck it up. They always do."

"You can listen-in on them, and check up," Nicholls told him soothingly. "Here's the message: To Officer Commanding, Space Navy Base, North Pole: Sir, I have the honour—you know the rest of that guff as well as I do, Joe—the operation against the Jacko space-ship discovered in this locality has been completed with some measure of success. On being prevented from returning to their ship the four aliens who formed its crew disappeared and probably committed suicide. The ship itself has been captured intact—that'll please them, Joe—. The following personnel were killed—give the names of the two chaps who copped it, Joe—the following action has been taken pending further instructions: ONE: civilian Terence Hartington Falkenberg, who originally notified us of the presence of this ship and who has managed close observations with the aliens before our arrival here, has been put on his way up to North Polar Base as his personal impressions are considered to be of first importance. TWO: A guard has been set round the ship at a distance of a mile, and will be maintained till further instructions are received. THREE: The ground in the neighbourhood of the points where the Jackoes disappeared is being searched for bits and pieces of Jacko and/or space-suits containing same. FOUR: Detailed narrative of events and impressions is being prepared and will be despatched. Signed Jeff Nicholls, Captain."

"I don't reckon this bit about 'bits and pieces of Jacko and/or space-suits' makes sense," Joe objected.

"It creates a brisk business-like flavour. End it out, Joe."

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" D'you reckon you might get a commendation or maybe even a medal for this job, Jeff ?" the radio-man asked. " It's been a nice clean job. These four Jackoes might have wiped out the village if we hadn't been slick."

" No," Nicholls opined. " No medals. More likely a black mark for letting the Jackoes get away."

" You're dead sure the ship's fixed to blow itself up if anyone goes near ?"

" Not dead sure," Nicholls told him, " but every Jacko ship discovered out in space has blown up as soon as anyone got within five hundred yards of it."

" So what are you going to do about this one ?"

" Precisely nothing. I've carried out orders, made the native village safe, dispossessed the Jackoes and captured the ship. From now on I'm merely the officer in charge of the guard, thank heaven. No doubt H.Q. will send down a team of highly-trained super-men to de-fuse the ship, and right welcome they are to the job."

Joe passed a cigarette over to his Captain. When Joe and Nicholls were not busy being radio-op and Captain respectively, rank was forgotten. This was due to a number of causes. In the first place their duties required them to pass most of their existence together. Both were disillusioned men ; neither could hope to rise above his present rank. Both were stuck permanently on Mars, Joe for health reasons, Nicholls for psychological ones. Both were bachelors, partly because they had passed the age of young love, partly because women were still scarce on Mars—scarce, expensive to entertain, and even more expensive to keep.

There was another very curious reason for this friendship between the two men. They were both enthusiasts for the same hobby. They spent their leisure making model aircraft.

Joe sent out Captain Nicholls' message to H.Q. and a number of routine matters in addition, then he lit another cigarette and returned to the subject.

" Does anyone know how these Jackoes arrange to make their ships blow up ?" he asked.

" The experts talk about proximity fuses," Nicholls said.

Joe snorted. " That's just a couple of words. Reminds me of ancient medieaval explanations—a magnet attracts iron because it contains a certain principle which has the capacity to attract iron."

" You're a well-read guy, aren't you ?" Nicholls said admiringly. " Have you got an explanation ?"

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"Not me. I read a story once about a super-bomb which had a super-fuse in it. This fuse was a sort of brain; it detected the thoughts of anyone approaching, and if it didn't like what the bloke was thinking it blew itself up."

"What they needed in that case was some guy whose thoughts were wholly pure. Forget the whole thing Joe. De-fusing the ship isn't our worry. Let's have a look at Matilda."

Joe went over to a large service-type crate, raised the lid, and with utmost tenderness lifted out their latest project—Matilda. Matilda was a model helicopter. It was a work of the greatest ingenuity. It was powered by a minute battery driving a double set of contra-rotating rotors which were necessary in the thin atmosphere of Mars, and it was manoeuvred by a radio remote-control. They tried it out inside the tent.

"The remote control isn't satisfactory yet," Joe said, "but I've fixed up with Corporal Sanders to have a nasty accident with his communications set. After that has happened we should have enough stuff to rebuild it."

"Go easy with those accidents, Joe," Nicholls warned him. "The accident rate for electronic equipment in this unit is pretty phenomenal already."

"Don't worry about that," Joe told him. "There's money in this gadget. When I've got over this remote-control snag I'm going to fit a small television camera in it, and the whole set-up can be used as a long-range look-see. It'll sell like hot cakes to those monied business-men back home on Earth."

"What on earth would they use a thing like this for?"

"Well, like this. These business-men work in offices all day and make stacks of money. With this money they get themselves film stars and other sorts of expensive dames as wives, so they have to keep going to offices to make more money to keep these dames. But they can't really get down to this task on account of worrying about what those dames are doing back home. Now they'll be able to fly Matilda back home once or twice every day and have it pop in at a window to look-see who their dames are entertaining."

"There's a snag," Nicholls told him solemnly. "The dames'll get wise and keep all the windows shut. Unless you can fix Matilda with a gadget to open windows as well. But, seriously I agree we've got a money-making gadget there."

They were both wrong about that, of course.

It took four days for a party of experts to get down from H.Q. They were uniformed men from the Technical Branch, and all senior

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to Nicholls. Their arrival necessitated the erection of additional tents, and an alteration to the messing arrangements.

"Now," Joe said, licking his lips, "now we'll see genius at work."

The experts walked all round the ship, keeping at a safe distance. From that range it looked just like a space-ship. After that they had spent a lot of time photographing it through long-focus lenses. The developed pictures resembled close-ups of a space-ship.

The experts cross-examined Nicholls and some of his men. Nicholls was a specialist in being cross-examined. He had troubles himself from time to time and sympathised with other people's, but did not intend to make himself a scape-goat. He avoided the luxury of speculation and surmise and similar forms of thought, and confined himself to statements of observed fact.

The experts presently went away, and when they got back to Polar Base they wrote a report.

The report said that the space-ship was undoubtedly a space-ship, that it had been examined thoroughly and that the personnel concerned in its discovery had been questioned. The report regretted that the officer in charge had allowed the Jackoes to escape and felt reluctantly compelled to remark that much information might have been obtained had this unfortunate event been prevented. It ended by saying that as the ship might possibly be fitted with some kind of self-destroying device they had refrained from approaching too close. They recommended that the appropriate department be instructed to remove the fuse, after which they would continue their examination.

Nicholls, of course, did not see this report, but he guessed it.

"So none of them stiff-necks is going to try to earn a medal?" Joe asked.

"You mustn't misjudge them, Joe," Nicholls told him. "There's no want of courage. But some higher-up has to O.K. every venture, and if it fails he's got to do a lot of apologising to the Space Navy Commission to console them for the loss of one captured space-ship. That sort of thing affects a fellow's career, you know—if the fellow's got a career. Suppose the case was different; suppose the ship merely killed every man who approached without harming itself, you'd find heroic and high-spirited souls queueing up to take the chance, and nobody trying to stop them. It's the ship that's irreplaceable, not the heroes."

"These visitors didn't seem to have a clue," Joe grunted.

"They talked a lot. They reckon that out in space these Jacko ships are fitted with a gravity fuse. The point is that out there the only gravity is the ship itself, and that's not much. If a man-sized body comes within half a mile the local gravitational field is sensibly altered, a needle swings over, contact is made, and bang."

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"Well?" Joe asked, "why shouldn't the scheme operate here too?"

"It might, but there are additional difficulties. In the neighbourhood of this ship of ours at the present moment there's a considerable hunk of material called Mars, so that a human being doesn't cause any noticeable change in the local gravitational field. Mind you, even so a fuse could work, but it would be a very delicate job."

"A gravitational fuse seems like the final barrier—the fuse to end all fuses," Joe commented. "The fuse can't be neutralised until a man goes right in and neutralises it, and he can't go in without carrying his own hunk of gravity along. Pity a gravitational field can't be screened like an electro-magnetic field."

"Not our worry, old son," Nicholls reassured him, getting up off his bed.

They went outside into the open and began to put Matilda through her paces. Matilda responded well to her radio controls within a radius of five hundred yards, but beyond that her reactions were erractic.

"We want a better control-transmission system," Joe told Nicholls. "We've gotta have one more accident to one more communications set before we get this perfect."

Three representatives of the Explosion Research and Development Branch arrived next day.

These three earned their living by dabbling with explosives and had in consequence acquired an embittered and fatalistic philosophy of life. Nicholls got on with them better than he had with the previous bunch.

"Very commendable of you," they congratulated him. "It's a near-miracle how you've restrained both yourself and your licentious soldiery from trying to walk up and scratch initials on the hull. We must mention that in our report, if we live."

"You're going to defuse it?" Nicholls asked.

"It's customary," one of the three explained. "We draw lots to decide who'll do the job."

"There are easier ways of earning a living," Nicholls pointed out.

"Not easier," the other objected. "This is one of the easiest going. I admit some jobs last longer, but few are easier . . ."

"So how do you go about it?"

"It isn't simple," the speaker explained. "We've been ordered to make no attempt to defuse the thing unless we devise a scheme which gives a reasonable prospect of success, so with one side of our heads we try to invent a scheme, and with the other we keep hoping we never will."

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The Explosives Specialists did not stay long. It was soon clear to them that from a distance of a mile they could not accumulate any information on which to formulate a plan. They sent a report to H.Q. to this effect, and proposed that the only thing to do was to draw lots to see which of them should walk over to the ship. H.Q. vetoed this suicidal proposal, and the Explosives men departed, quite cheerfully.

The Jacko ship stood out in the desert, its round entrance hatch open, as if inviting a visit.

Nicholls looked over at the ship each time he made his rounds. "Suppose it has no fuse at all?" he thought. "Wouldn't that be a big laugh?"

He considered this idea, and decided that it was quite likely. The Jackoes unquestionably fitted their ships with proximity fuses designed to operate out in space, but perhaps they had no device adapted to gravity conditions.

Their next visitor was a fighter-scout. His name was Charters, and he had recently returned to Mars from an advanced base out in the asteroids.

"So what special interest do you have in this business?" Nicholls asked him.

"Quite simple," the other told him. "I've come here to make an examination of the ship."

"How?"

"By walking across there and crawling inside, of course."

"A lot of people think it's rigged up with a proximity fuse."

"I know, but we don't reckon that's possible in the circumstances. If we're wrong, it's too bad for me, but I've taken big chances before."

"Does H.Q. at Polar Base know about this?"

"Good heavens no. I heard about this ship after I arrived, and of course I discussed it with some of our people at Polar Base, that's all. Our point is that we have no time to wait while Technical Branches muck about. We are really keen to know as soon as possible what sort of works that ship has got. So we decided to short-circuit all the red-tape and do the job ourselves."

"I see," Nicholls nodded, then "Joe!"

"Yessir?"

"Whistle up Sergeant Smith. Tell him to come over here at the double and to bring a couple of men with him."

"Yessir," Joe replied, and turned to his radio.

The newcomer and Nicholls continued to talk about this and that for the next five minutes, the Sergeant Smith came in through the air-lock of Nicholls' H.Q. tent and saluted.

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" I've got the two men you asked for outside, sir," he said.

" Right Sergeant !" Nicholls nodded. " This officer is Lieutenant charters. He tells me he intends to walk out to our Jacko ship and inspect it. He has no authority to do so, and your orders are to stick with him day and night as long as he is here and to see that he doesn't. In case you're worried about the possibility of using physical force on an officer, I'll give you these orders in writing, and signal them to H.Q. Polar Base. Thus you'll be happy in your work. On the other hand if you slip up on this thing you'll be in real trouble. Quite clear about this sergeant ?"

The sergeant looked Charters up and down and said he was.

" Well I'm damned," Charters exclaimed. " I take it you aren't very much interested in getting on with the war—just anxious to keep your nose clean."

" Listen son !" Nicholls told him. " I long ago missed the boat for promotion and I'm past having military ambitions of any sort ; in addition there's no one disobeyed more orders and broken more regulations than myself. But when there is some order which prevents well-meaning but feather-headed school-boys like yourself from committing suicide and destroying valuable captured material as well, I reckon it's a good order and I mean to enforce it. You're welcome to stay here as long as you like but you'll have these watch-dogs on your tail all the time."

" You'll not refuse to let me send a message ?" Charters demanded.

" Of course not. The Radio-Op will send out anything you give him," Nicholls promised.

Charters stayed only two days. He sent a signal to someone at H.Q. trying to get Nicholls' order over-ruled, but the only result was a peremptory instruction to return to H.Q. at once.

Charters departed. The Jacko ship still stood in the desert.

Nicholls and Joe devoted all their leisure time to perfecting the controls of Matilda. These activities were not unconnected with the destruction of two more service inter-com sets, the requisitioning of two replacements from H.Q., and a memo from H.Q. asking for an explanation of the high rate of destruction of these items in Nicholls' unit.

For a while they had no visitors. Judging by the radio traffic on the subject, the captured ship was being passed briskly from Department to Department on paper. Nicholls received questionnaires from Intelligence, from a research group which was still known as Aircraft Design, from Tactical Planning, and from the Committee on Metals and Alloys. He himself and the ship and his men and the locality as

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a whole were the subject of a television programme relayed back to earth.

But the ship still stood on the sands, unvisited, unapproached, untouched. For reasons which do not require elucidation here, the men had christened it the Patient Virgin.

Matilda had now reached a state of near-perfection. She would perform every evolution precisely and exactly. She was a thing of joy. One day Joe squatted on the floor of the hut. He was oiling Matilda's tiny motor with a hair-like syringe.

"It's agreed by all concerned," he asked, "that the ship does have a gravity fuse?"

"Not by all concerned," Nicholls corrected. "Some think it has no fuse at all. Other's think it's gravity fuse won't work in planetary conditions."

"Let's assume it's a gravity fuse," Joe proposed, screwing a watchmaker's lens into his eye. "Then there must be a minimum hunk of matter which will make it click. What I mean is, even though the fuse would click over if a man climbed in through the hatch, perhaps it wouldn't if a mouse did the same thing; or a bee; or a fly."

"That's sound enough. I think that sort of argument might apply to any sort of fuse."

Joe cleared his throat. "Do you think Matilda would make the fuse click?" he asked.

There was a long, long pause, while Nicholls made a high-speed mental examination of all the implications of this remark.

"You old——" he exclaimed at last. "I bet that idea's been simmering away at the back of your mind for some time!"

"Maybe," Joe agreed. "What d'you think of it?"

"It's a sound enough idea, to which the answer unfortunately is, no. I don't want to finish my days as a broken-down discharged soldier driving a truck around North Polar Base."

"Listen to me, Captain," Joe said earnestly. He very rarely gave Nicholls his title when they were alone. "The Big Brains have been chewing at this problem for weeks now, and it's clear that it's too tough for them. When they get around to admitting this fact to themselves, who are they going to toss it to next? The answer is, right back to you. And when it does land back in your lap you won't be able to avoid making an attempt to de-fuse it yourself. Don't you see what will happen? When you and the ship are both blown up, the experts will say, 'Poor fellow! Misguided enthusiasm! My department was working on the problem, and would certainly have come up with an answer quite soon. So much valuable information lost to us as a

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result of this ill-advised action. Why were we not consulted before this rash step was taken?' "

"Reading these signals you send out has made an embittered man of you," Nicholls commented. "I agree with a lot of it, of course. I agree that it may be tossed back into my lap. I think that circumstances may force me to try to de-fuse it, and I think that if I do I shall very probably be blown to bits. But I think that is preferable to being thrown on the junk-pile while still alive."

"If we sent Matilda to visit the ship," Joe went on, "if we set up a control behind a hillock somewhere, and did it about sunset, none of the men would know what we were doing. Nor are they likely to see Matilda if we fly her near the ground. So if the ship does blow up when Matilda comes near, who can be blamed? The guard will supply evidence that no one was seen approaching the ship. But above all no one will be missing. It'll be a clear case of spontaneous detonation, and all concerned will be much relieved. Especially you."

"You've got a powerful argument there, Joe," Nicholls conceded. "But I don't see what we gain by sending Matilda over to examine the ship."

"Neither do I," Joe confessed. "But one piece of information leads to another. I reckon we might proceed step by step until we finally crack this job."

They did it that very evening. They walked out into the desert carrying the model and its control equipment. They set up the control equipment on some high ground from which they could look down towards the ship.

Matilda's little motor whirred, and she rose vertically off the ground. They kept her flying at a height of only two feet, and chose a course among the sand-hills that concealed her from the guards. The television eye in her fuselage sent back a tiny clear picture of her immediate surroundings, which made it easy for her controller to avoid hitting anything.

As she approached the ship Joe and Nicholls held their breath. "No need to go slow, Joe," Nicholls said. "If it blows up, it blows up, and that's all there is to it."

Matilda approached within a hundred yards of the ship—fifty yards—twenty yards. Details of the metal-work, seam-welds, scratches, and surface markings could be observed clearly. Matilda moved to within a yard of the metal hull.

Nicholls let out a long whistling breath.

"Well—What now?"

"A thorough inspection," Joe told him.

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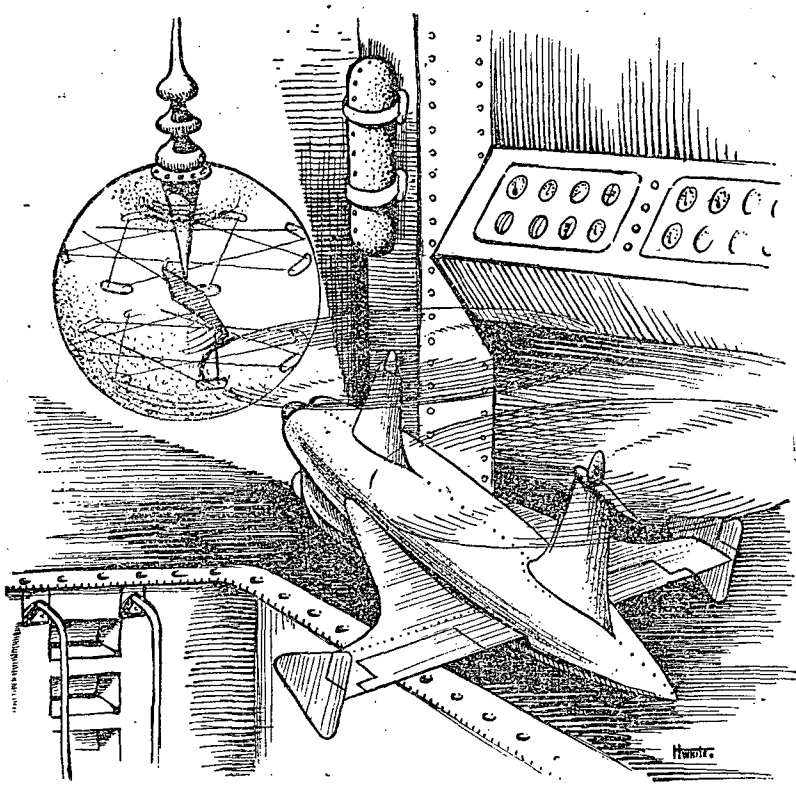

Matilda climbed all the way up the tall side of the ship, and tried to peer in at the nose-window. Nothing could be seen inside. The far side of the hull could not be examined of course because Matilda's control-beam would be blanketed by the ship itself. They brought her down the flank of the ship, and let her peer in at the open hatch. The shadowy outline of girders and tubing could be observed.

"Joe," Nicholls said, "up till now you've had most of the ideas, but I'm just beginning to have a few myself. Fly Matilda inside the hatch. Just inch her inside as far as you can. If the damn thing doesn't blow itself up we can proceed with my idea."

Joe was lying on his stomach on the ground, gently manipulating the control rod attached to the radio-control while he peered at the screen of the small television receiver.

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"It's pretty shadowy inside," he muttered. The screen grew dark as Matilda, hanging on her whirring motors, advanced into the alien ship. "Right inside now," he announced.

"Good!" Nicholls agreed. "Enough for today. Bring her back."

Matilda came whirring back. They put her away in her box and walked back to their tent.

Nicholls stretched himself out on the bed in his customary posture and lit a cigarette. Having then assured himself that the affairs of his company were running smoothly, he allowed his mind to return to the escapade of Matilda and the space-ship.

"What's the weight of Matilda?" he asked Joe.

"About seven pounds Martian," Joe told him. "I've lost the habit of estimating weights in earth-pounds."

"O.K. then," Nicholls reflected. "We now know that a seven pound weight can approach right up to the ship without causing a nasty accident."

"So all we gotta do is pick a specially intelligent five-day old child and tell him to crawl inside the ship and disconnect the fuse."

"We could fly Matilda right inside the ship and have a look-see at the works."

"What good would that do?" Joe asked.

"Knowledge is power," Nicholls told him solemnly. "If we knew the layout, knew what the fuse looked like, that would be a big step forward."

"Matilda's smart," Joe objected, "but not smart enough to see in the dark."

"It'd be a mere ten-minute job for a wizard of the soldering iron like yourself to rig a light-bulb in her fuselage."

"I suppose so," Joe admitted, "but here's objection number two—you're proposing to maneouvre Matilda inside the ship, right? Now, Matilda's controlled by a radio-beam that won't penetrate through the metal of the hull. In other words, Matilda passes out of control the minute we set her to climb upwards inside the ship."

"Objection sustained," Nicholls conceded.

He lit another cigarette, and stared at the ceiling some more. After five minutes he spoke again.

"All the time I've been here I've resisted the temptation to tinker with this problem. But if I'm likely to be ordered presently to solve it, the more I find out about the ship the better."

"That doesn't make it easier to control Matilda through a metal hull."

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"In a way it does," Nicholls told him calmly, "for it has caused me to have a brainwave. Build a relay and cause Matilda to fly it out to the ship and set it down just inside the lock. When you send out a control-impulse it hits the relay lying in the hatchway, and is re-radiated inside the ship. The relay's got to be made to send us back Matilda's television picture too."

Joe considered this. "Not at all bad," he approved. "A relays' not a very complex thing. But I've got to make a release as well so that the relay can be set down."

"I'm sure you'll manage a little thing like that," Nicholls told him confidently.

"Oh, yeah? All very easy for you, lying on your back giving off brainwaves. This particular brainwave's going to cost me a week of work."

In actual fact he did it in a couple of days and tested it and it worked.

"Except there's a snag," he said.

"Then don't look so happy about it," Nicholls told him. "Tell."

"The total weight of Matilda plus the relay is now ten pounds, not seven. We know the ship doesn't blow up when seven pounds rubs against it. Can you guarantee that it won't go off with ten pounds?"

"Of course I can't. You've got to cut the weight down."

"How?"

"The power-pack of course. Our present power-pack is good for three hours, I think. Cut it down to one. Matilda can fly out, explore the ship's innards for nearly half-an-hour, then fly back for a re-charge."

"It gets more and more complicated, doesn't it?" Joe grumbled.

They went out together at dusk and set up the control equipment in the same position as before. Joe attached the square box that was the relay to Matilda's fuselage, and tested the magnetic release a couple of times to make sure it functioned. Then he sent the little toy whirring down over the sand dunes. Peering into the television screen, it almost seemed to Nicholls that he was in the helicopter himself riding down towards the alien ship. Seen through Matilda's television eye, the ship came near and the dark opening of the hatch yawned big and dark and mysterious.

"Move over and let me have a good view of this," Joe told him. "I've gotta steer Matilda through that hole."

He held the long control rod lightly between finger and thumb. The picture in the screen bobbed up and down as he manipulated it. He reached forward and clicked a switch. The picture brightened as a flood of light poured from the tiny high-efficiency bulb in Matilda's

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nose. Parts of the interior of the ship could now be seen clearly ; an immense tube on the central axis, ducts, bracing members, something that looked like a sort of lift, and a narrow circular passage extending upwards.

" We've got to drop this relay where it will be able to receive our control-signals and transmit them up that central passage. That's the direction we want to go exploring."

" Pretty crowded in there," Joe commented. He was concentrating hard. With tiny movements of the controls he was causing Matilda to move slowly up and down and around inside the hatch-way.

" Nobody's going to provide capacity inside a space-ship just to carry empty space around. Every cubic inch of a machine like that has got to be planned for some use," Nicholls told him.

" I'll set the relay down on this shelf," Joe said to himself. He grunted and muttered a bit more, then suddenly his hand darted out and he clicked a switch.

" There," he exclaimed. " Relay now in position. I'd better bring Matilda back for a re-charge. You know, if we had one of these super-intelligent mutated white rats you read about in science-fiction stories, things would be a lot simpler. We'd just send the rat in to have a look round, then come back and report."

" The rat would probably take over the space-ship and blast off with it," Nicholls objected. " No . . . Matilda's safer."

They recharged Matilda's battery and sent her back. This time by means of the relay it was possible to make her ascend the vertical shaft right into the interior of the ship. The light in Matilda's nose illuminated bare metal walls, ducts, occasional recesses, fitments whose purpose could only be guessed at. The top of the shaft, which was perhaps fifty to seventy feet above ground, emerged into a wide chamber. It was possible to see that this place contained a great deal of complex equipment, but Matilda's lamp was not sufficient to light up the place clearly.

" Matilda's suspended above the shaft, getting my signals from the relay below, but if she moves away from there the signals may be screened, and she'll go out of control," Joe said.

" We need another relay," Nicholls told him.

" A second relay at the top of the shaft," Joe agreed reasonably, then with a shift to heavy sarcasm, " and what would you set it down on—air ? Remember it's got to hang over the shaft in order to receive signals and to re-transmit the television wave-bands."

" Let's have Matilda back now," Nicholls told him. " We'll think the next part of the problem over till to-morrow."

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Next day Nicholls received the order he had been expecting for some time. He was instructed ' to take whatever steps he thought proper in order to investigate the details of the alien ship, to report back from time to time, and to avoid the running of unnecessary risks either by himself or his personnel.'

" It's all yours, Captain," Joe told him sardonically. " Right back on your plate."

" Yes. It's too hot for anyone else to hold and I happen to be Johnny-on-the-spot. In attempting to carry out this order I cause myself and the ship to blow up, thus relieving everybody of a sticky problem."

" You could do nothing," Joe suggested.

" Then H.Q. keeps asking for results till at last I'm prodded into walking out there."

" The ship might have no fuse," Joe said.

" That would be a big laugh for me," Nicholls agreed.

" We could test that," Joe offered. " Get Matilda to carry chunks of rock through the hatch, one at a time, till the total weight is more than a man, then if the ship hasn't blown up in the meantime, you know it will be safe to enter. So then Matilda removes the rock and you go in yourself, feeling ever so safe. On the other hand, if the ship blows up the only sufferers will be Matilda and a lot of bits of rock."

" Quite sound, but I think we'll keep that as a last resort."

" Sure," Nicholls told him. " First, we'll get an automatic camera and hitch it to that television receiver, then everything Matilda sees will be recorded and available for later. Next, we'll replace that light in Matilda's nose with a focussed beam. Then we send Matilda up the shaft, keep her suspended over the shaft so that she's under control, and make her turn round slowly, so as to shine the beam on one thing after another. Anything the light shows up will be photographed by the camera."

" Good enough—but you'll have to requisition a camera. That's something I can't make up out of sardine tins."

" Sure," Nicholls agreed. " Now we're officially in the de-fusing business, I can requisition anything."

It took them a week to get the changes made and the camera delivered, but after that they were able to proceed with more speed, for as Nicholls said, they were officially in the de-fusing business and he was able to use his men to help. Once again therefore, the party lay out on the sand hills above the ship. Joe operated the controls, while a second man supervised the camera.

As soon as Matilda got within a couple of yards of the hatch, the camera was switched on and continued automatically to take a photo-

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graph every ten seconds. Matilda was now provided with a powerful focussed beam of light directed along the line of sight of her television eye. Joe made her ascend the vertical shaft slowly and caused her at the same time to revolve, so that every part of the walls was examined. Whenever some important-looking item of equipment showed up, Matilda was made to pause while two or three photographs were taken of it.

Matilda rose into the middle of the chamber at the top of the shaft, and remained suspended there, rotating slowly on her vertical axis. A business-like and meaningful array of instruments and equipment was disclosed. Nicholls photographed everything.

Matilda was made to rise further. In the middle of the room there was suspended a ball of transparent material about six inches in diameter. It was possible to bring Matilda quite close to the thing and examine it in detail. Inside the ball was a long thin needle balanced in the manner of a compass, except that it was dipping sharply downwards. The needle was surrounded by a cage or network of fine glittering golden wires.

"Joe!" he exclaimed sharply, "Move Matilda away from that ball!"

Joe did so, and the thin needle tilted upwards a little, away from the mesh of wires surrounding it.

"That," said Nicholls, "is the gravity fuse we've been looking for. Notice that out in space any slight change in the gravitational field surrounding the ship would be sufficient to make the needle tilt. Down here it can't be effective over such a great range, but it's suspended over the shaft, as you see. Any change in the gravitational field in the shaft, made for example by a man entering and starting to climb it, will tilt the needle. When it tilts enough to touch that mesh of wires—Bingo!"

"The Jackoes climb the shaft from time to time," Joe pointed out.

"Of course they do, but not until they've disconnected the fuse circuit."

"Anyway, that's the fuse sure enough," Joe agreed, "and I reckon if we'd brought Matilda another three inches nearer, it would have gone off. Did you notice how much the needle was tilted before you told me to bring Matilda away from it?"

"I did. We've been lucky there. Let's not overlook that point."

Captain Nicholls went back to his tent, laid himself down on the bed as usual, and began to dictate.

To Officer i/c Polar Base:

"I have the honour to report that an examination has been carried out of the interior of the space-ship in accordance with your instruc-

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tions received yesterday—give the date and reference, Joe, and I bet those few simple words make the whole place sit up and take notice—The examination was carried out by means of a radio controlled flying model, the property of—put in your name and identification, Joe ; we want it on record so that you get the credit and any award that's going—which was adapted by the N.C.O. in question to carry a miniature television transmitter of the type known as a radio-eye. As a result of this inspection the ship's self-destruction fuse has been identified and a number of photographs taken. It is regretted that these photographs are not of the best quality, since they are taken via the television equipment . . ."

" But really they're beautiful photographs," Joe protested.

" That's put in to show how innocent, eager and modest we are," Nicholls told him, then continued : " They are being sent by air. I wish to request that the Explosive Section be asked to study them and to recommend a method of making the fuse harmless."

Nicholls was purring like a cat. It amused him to picture the stir this signal would cause at Polar Base. Experts and specialists had tinkered with the problem for months without making any headway and now he, a general duties officer who merely happened to be guarding the ship, had got well on the way to finding a solution.

This message went off, the photographs followed, and Nicholls sat back to enjoy the reactions from H.Q.

The first reaction—if it was a reaction—was totally unexpected. It consisted of the arrival, two days later, of a Colonel Hastings. He came in an aircraft accompanied by four N.C.O.'s and a considerable number of large packages. Colonel Hastings made no reference at all to Nicholls message, but proceded briskly about his business.

" You're officer in charge here, I take it. I'm Hastings, Technical Intelligence. I've come to make an examination of the alien ship. I'll need a certain amount of co-operation from you."

" Your visit arises out of my message to H.Q. I suppose, Colonel ?"

" Your message ?" The Colonel looked at him distantly. " My dear fellow, I'm not concerned with administrative matters, and to be blunt with you, I haven't been aware of your existence till this moment."

Nicholls felt suddenly bewildered.

" Sir," he explained, " two days ago I sent a report about my examination of the alien ship. I naturally supposed . . ."

" You sent a report ?" The Colonel was more than slightly contemptuous. " No doubt it's receiving proper attention somewhere. I'm afraid it hasn't reached me yet, and frankly, I doubt if it will. Our branch receives a great many suggestions—all carefully screened, of course . . ."

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Nicholls' bewilderment began to be replaced by dark suspicions.

"How do you intend to make this examination, Colonel?" he asked. "The proximity fuse . . ."

The Colonel's frostiness increased, but he offered an explanation.

"I've no special ability for giving non-technical explanations," he snapped, "but briefly I, or rather my department, has developed a remote-control scanning-robot, with which we shall make an examination of the interior of the ship." Colonel Hastings talked in a sharp, hard, confident manner, and his eyes, like two pale blue pebbles, regarded Nicholls without friendliness or humanity. Just when he spoke this last sentence however, his glance shifted away uneasily.

Nicholls swallowed hard, and said nothing more.

"What's it all about, Jeff?" Joe asked later when they were alone.

Nicholls regarded the tip of his cigarette and spoke without emotion.

"Our report to H.Q. has been received and understood. The excellent Colonel Hastings has seen a golden chance to get himself a spot of reputation and promotion. Do you know what a remote-control scanning-robot is? It's just another name for Matilda. As soon as Hastings read our report he must have got his Tech. Lab. to knock together another of the same. While H.Q. is still discussing our report he'll make his examination and submit a bigger, louder, more important and more elaborate report, and three months from now, when times and dates have got sufficiently confused, he'll be recognised and accepted as the man who came up with the answer to the gravity fuse. You and I may even be in trouble for being a couple of amateurs whose tinkering might have spoiled everything." Nicholls said all this with a calmness which did not altogether conceal his bitterness.

"Well, the . . ." Joe proceeded to express his opinion of Colonel Hastings. He also began to describe what he would do to him.

"Now hold steady, Joe," Nicholls warned. "As a rule I take life as it comes, and act all fatalistic and cynical, but this thing I'm going to fight. Don't let's get ourselves in wrong by being abusive. Let's play it clever."

"O.K., O.K.," Joe agreed. "But at least I must see what sort of contraption he's knocked together to do the job. I'll be surprised if it's anything half so good as Matilda."

Joe went out across the desert to the spot where Colonel Hastings' men were rigging up their equipment, and did a bit of snooping around. When he came back to Nicholls' H.Q. tent he was grinning all over his face.

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"It's nothing so good as Matilda," he reported. "It's a proper clapped-up job, as might be expected when you consider it's been shoved together in a matter of hours. It's got vertical and horizontal jets instead of rotors, and a ruddy great tele-camera mounted externally. I guess it weighs about four times as much as Matilda."

"But it'll do the job, just the same, won't it?" Nicholls asked. He was feeling extremely low-spirited about the whole thing now.

"Don't you remember?" Joe reminded him. "Matilda nearly tipped the needle of that fuse right down when she was close. When that hulking great contraption goes inside the ship what d'you suppose will happen?"

"I see!" Nicholls reflected.

"In about one hour from now," Joe prophesied, "that ship will blow itself to pieces. I must get myself right back into a position where I can watch Hastings' face when it happens."

"I must warn him," Nicholls decided, picking up his out-door equipment.

"Don't be a ruddy fool, Jeff," Joe urged. "He double-crossed us, didn't he? Let him alone."

"Very tempting, I agree," Nicholls said. "But there's a war on, and I get a certain amount of pay for helping in my insiginficant way to win it. That fact takes priority over any private feud with double-crossing colonels."

"No wonder you're still only a blooming captain of ground-hogs," Joe told him sarcastically. "I'd better come along and take care of you."

Nicholls went out into the sand-hills where Colonel Hastings was supervising the erection of his equipment.

"Sir," he said civilly. "May I have a word with you privately?"

Hastings looked at him warily; Nicholls' expression was neither rebellious nor sullen, merely officially polite.

"Very well, Captain—as briefly as possible, please—you see I'm busy."

"This will only take one moment sir. You are, of course, quite well aware that I sent a similar robot into the ship a couple of days ago. —May I finish please?—My device was much smaller than yours, and even so it nearly tipped off the gravity fuse. I believe this thing of yours is too large, and that it will actuate the fuse and blow the ship up. That's all, sir."

Hastings' hard pebbly eyes regarded Nicholls for a long moment; clearly he knew quite well what Nicholls was talking about, and it seemed that for an instant or two he considered the warning seriously. But of course it was impossible for such a man to believe that Nicholls

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could be acting in good faith ; to his type of mind it was immediately clear that this was simply an attempt to delay matters.

" Captain," he snapped. " I haven't the least idea what you're talking about. Except I've a suspicion you're trying to get some personal credit out of this investigation. Be good enough to keep out of my way in future unless you wish me to make an official complaint about you."

He strode purposefully back to his group of N.C.O.'s.

Three-quarters of an hour later the ship blew up.

Several days later Nicholls and Joe watched the undignified departure of Colonel Hastings, hurriedly recalled to North Polar Base, and waited for the storm to break, but the days passed into weeks before a delegation of high-ranking brass arrived. To their utter confusion they found that the Government were prepared to reward them handsomely for their work in developing Matilda—the General making the speech subtly pointing out that, after all, they *had* been using Government stores for the experiments.

Their photographs taken inside the Jacko ship had produced a great quantity of valuable technical data, which, for the time being, it was thought best to keep secret. Undoubtedly the information in the hands of Earth technicians could well be a turning point in the war against the Jacko mother-fleet sitting out on the edge of the Solar System.

Concerning Colonel Hastings they could learn little except that he had been posted back to earth—as a lecturer at the Space Academy.

Alan Barclay.

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THE MIGHTY MIDGETS

Immortality has long been a dream of Mankind's—an Eldorado at the end of the rainbow—and although science has now lengthened the span of life it has made little impression on the longevity one could wish for. Yet, down in the microcosmos, long life is the accepted rather than the abnormal rule.

By John Newman

There is one form of life that never fears old age, that never dies of senility. One form of life that can live and reproduce under a half or a thousand atmospheres pressure, life that is not killed by freezing to absolute zero, the ultimate in coldness, and can adapt itself to eat practically any carbon compound, even prussic acid or carbon monoxide.

No! Not some weird extra-terrestrial being from the depths of Jupiter nor a mutation from the laboratory of a mad scientist. These are just a few of the abilities of bacteria, the most widespread of all life on Earth and, for all we know, throughout the Galaxy.

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Tiny creatures, included in the popular categories of germs and microbes, they are so small that a million or so would form a single layer on the proverbial pin head. Yet not really creatures, for they are classified as plants. Many types of bacteria can move about and often contain no chlorophyll yet their classification with vegetables is based on sound reasoning. They can synthesise complex molecules from carbon dioxide, water, ammonia and inorganic salts and, also like plants, their skins are rigid structures made up of carbohydrates. The skins of animals are composed of proteins—nitrogen-containing compounds—and animal cells multiply by growing and splitting into two parts along the length of the cell whilst bacteria reproduce by splitting across their shortest axis.

It is this method of reproduction that makes individual bacteria immortal. Only lack of food or violent death can destroy the individuals, so present bacteria are, to all intents and purposes, the same ones that existed millions of years ago.

Although bacteria are so small, ranging in size between a ten thousandth and a hundredth of a millimetre, that they cannot be seen with the naked eye, it is possible to see the tiniest with a first class, light-using microscope whilst their internal structure can be seen under an electron microscope.

Our knowledge of the far distant, past history of bacteria is most circumstantial—their bodies are too soft to leave fossils and little is known of their evolution. However, we do have evidence that they existed way back before the Cambrian age. Many of the thick deposits of iron ore were laid down by bacteria at that time, a thousand million years ago. One scientist even claimed that the living bacteria in coal have existed in a state of suspended animation ever since the coal seams were formed. Although this seems unlikely (it is more probable that they came from the water percolating from the surface) it is difficult to be certain. We don't even know whether the bacteria of the carboniferous age were identical with the present day ones or whether they have mutated.

Some bacteria form spores that are so resistant to cold and radiation that it has been suggested that they have been spread throughout the Galaxy by meteorites or the light pressure of suns.

It is probable that bacteria were one of the earliest forms of life on Earth. In those first years following the formation of the Earth the atmosphere was completely different from that which we now enjoy. To us, it would have been completely unbreathable—a reeking, reducing atmosphere containing much ammonia gas and devoid of oxygen. The first bacteria must have been able to use this ammonia

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as the nitrogenous part of their metabolism, as some do to this day. Later, there were mutations and some bacteria gained the ability to convert ammonia into nitrates and other bacteria developed to change this into nitrogen. The cycle was completed when bacteria began to convert nitrogen gas into ammonia.

There are relatively few variations in the shape of bacteria, they are mainly ovoids, rods and spirals and a small number that are spherical. Their shapes are determined by their rates of growth and the rigidity of their cell walls. The lower limit to their size is set by the volume needed to contain all the enzymes (organic catalysts made up of proteins) needed for growth, respiration and reproduction. Suspensions of the smaller bacteria settle out only very slowly due to the random bombardment of different sides of the bacteria by gas or liquid molecules. When they are tracked under a microscope it can be seen that those without long tails for swimming just jiggle around in what can be statistically shown to be completely random movement. This Brownian movement was used as one of the verifications of the atomic nature of matter.

It is astonishing how far afield you can find bacteria. Even in the air three miles above the Earth there are some that have built up a resistance to the low temperatures and ultraviolet light that is prevalent there. In general, however, the number of bacteria rapidly decreases above a quarter of a mile from the surface ; that is, above the zone where the surface types are borne upwards by the air currents due to surface irregularities. On the surface they can be found in the dry sand of deserts, in the sea and in the polar wastes. It is a striking fact that there is no segregation of types—similar types are found at the Equator and at the poles. This is not surprising when it is realised that they can be spread by wind, water and animals, the three most efficient distributors of seeds and spores.

Naturally, there are different types found at specific locations where adaptation to the environment favours some resistant strain but a type which is found to live in the hot springs on one continent will also be found in hot springs on other continents. And bacteria like a quiet life. Everything else being equal, the more stable the environment the greater number of bacteria found there.

In the soil, there are more bacteria in the first few inches than at greater depths, including ones which need no oxygen. But the ubiquity of bacteria is such that they are found in the drillings from oil and artesian wells from over a mile beneath the surface, mainly types which live by reducing nitrates and sulphates.

The oceans of Earth are almost a soup of bacteria, the constant temperatures and food resources providing them with the conditions

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they prefer. Here, their greatest numbers are found between 75 and 150 feet below the surface. Below this, there is a rapid drop to a minimum number at 600 feet and a slow rise to another maximum at the ocean bed, whether it be a half mile or three miles below the surface. Those that live in the mud at the deepest parts of the oceans have adapted to a thousand atmospheres pressure and it has been found that they can withstand several times this, although they will not then reproduce. Even surface types can reproduce at 600 atmospheres pressure and, as long as the pressure is not suddenly released, can be brought back to surface conditions without seeming the worse for the experience.

This is because bacteria are 80% water enclosed in a skin that allows liquid to diffuse through and so equalise the internal and external pressures. On slow decompression the water just diffuses out again. Food is selectively absorbed with water through the skin and the waste products lost by diffusion outwards.

Although it is almost three hundred years since Leeuwenhoek first saw bacteria in his microscope it is little more than a hundred years since Pasteur proved that bacteria are necessary for fermentations and showed how they can infect initially sterile media. He dealt the death blow to the theory of spontaneous generation of life, it then being believed that micro-organisms just came in to being from nothing as the result of fermentations and decay. He went on to lay the foundations of the science of bacteriology, the study of the ecology and place of bacteria in the Universe. Even then, following the proof of the existence of bacteria, one school of thought believed that there was only a single type of bacterium that was capable of easily changing its form and habits to suit its environment. Luckily, this concept was shown to be untrue.

Bacteria were first regarded as " seeds of disease " and the " enemy forms of life " but in actual fact the number of types of bacteria that cause diseases such as syphilis, typhoid and tetanus is only a small proportion of the thousand of types that are known. The disease-causing types are parasites that have lost the power to synthesise their food and they die unless they can obtain their nutrition from a living host. But the disease-causing ones affect our lives so catastrophically that we are aware of them and tend to ignore the larger number of bacteria that are useful, even essential, to life on Earth. In the past the emphasis was on their destruction and control in medicine, health and food preservation but today they are used as tools in all manners of manufacturing processes and scientific problems.

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Part of their usefulness lies in the fact that they multiply extraordinarily fast—rabbits have nothing on bacteria. A single cell that divides every thirty minutes, quite an average time for fission, will have produced a thousand million bacteria.

Using bacteria, problems in genetics and physiology can often be solved in a matter of a few days after hundreds of generations have been bred. They are even used as a standard procedure during the analysis of carbohydrates and vitamins where chemical methods would be too cumbersome. The preparation of cream, butter and cheese from milk are probably the oldest deliberate applications of bacteriology but bacteria are present in most fermentations and, nowadays, particular strains of bacteria are carefully bred for particular jobs. Every human group on Earth, except the aborigines of Australia, developed the fermentation process to yield some form of alcoholic drink. One of the few common factors in most cultures. During the 1914-1918 war the lack of acetone almost lost the war for the allies, for acetone is used in the manufacture of cordite. However, a bacteriologist came up with a type of bacteria that he had found produced acetone instead of alcohol during fermentation. Other useful bacteria produce glycerine, vitamins and antibiotics whilst large-scale use is made of them in the disposal of sewage and the production of methane gas. Without the bacteria in the soil and water to act as scavengers to convert waste vegetable and animal materials into usable compounds, the surface of the Earth would soon be choked by a layer of filth.

We even depend on bacteria for a large part of our fuel, for it is now thought that petroleum is the end product of the decomposition of bacteria under special conditions.

Visible and infra-red radiations are harmless to them as long as their temperatures are not raised by the absorbtion of the light but ionising radiations such as ultraviolet and X-rays which cause death and mutations The mutation rate of bacteria under many conditions has been intensively studied and it has been found that under normal growing conditions radiation can only account for one percent of the mutations. The remainder are spontaneous and unpredictable by present methods. X-rays are a hundred times more effective at causing mutations than is the same dose of ultraviolet light. Even using X-rays there is only one chance in twenty that a direct hit on a bacterium will cause a mutation. This is because only five percent of the volume of bacteria is made up of genes, the hereditary groups that are sensitive to radiation.

Bacteria are inactive when frozen but, as long as they are frozen and thawed quickly so that ice crystals cannot grow and split their skins, they can be regenerated by thawing. This has been used to

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keep different strains of bacteria in a state of suspended animation for years at a time so that they do not continually need transferring to new media nor can mutate. Some types of bacteria can withstand a temperature of 150°C. for a short time but, like all living creatures with a carbon chemistry, anything higher than this soon kills them. When the temperature is enough to destroy them their deaths are normally due to reactions with the oxygen of the air, as is shown by the fact that a smaller number die when they are heated for the same time and at the same temperature in an atmosphere of nitrogen or in a vacuum. Then their deaths are due to changes in the fats in their bodies.

The essential needs of bacteria vary widely from one type to another but they must all have foods to release energy in their bodies and to build up protoplasm. Plus water and traces of mineral salts. Some contain green chlorophyll-like pigments and use sunlight and carbon dioxide in photosynthesis whilst others oxidise hydrogen to water or form hydrogen from water. Some need oxygen but a large number, the anaerobic ones, are quite happy in its absence and multiply exceedingly fast in tinned food. Given time, they will even eat antibiotics such as streptomycin and adapt to it so well that it becomes an essential part of their diet. Each species has a limited range of food preferences but, together, they cover the whole range of possible foods.

One thing they all have in common is that they produce heat whilst they are alive, the cause of spontaneous combustion in stacks of green hay and leaves.

Just as little fleas have lesser fleas upon their backs to bite them, so bacteria have their own parasites, known as bacteriophages. These are viruses that are so highly adapted that each can only multiply inside one particular type of bacteria—but can mutate whilst multiplying and so change the type of host that it requires.

In the future, scientists are going to find bacteria more and more useful as they learn how to select and harness their remarkable properties. Perhaps even teach them to wage war on the unwanted types—having conquered the macrocosmic world we are now reaching for the microcosmos.

John Newman.

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THE

Insurance companies could no doubt produce some fascinating statistics on longevity in certain families. This idea evidently set Alan Guthrie on a train of thought which produced the following sparkling effort.

PENSIONERS

By Alan Guthrie

There was something disquietening about the new neighbours. It wasn't just that they didn't own a car, though that in itself made them unique on Maple Avenue, but, as Martha Prentice emphasised, they didn't even have television.

"You can't be sure of that," protested George. He was a chubby, over-fed, under-exercised man with a highly developed imagination and a firm set of prejudices. The imagination helped him to sell insurance. The prejudices were responsible for his looking ten years older than his actual middle-age. He reached out and buttered more toast.

"I am sure," snapped Martha. Like her husband she was no longer young and was that type of woman who seem to become pickled with age. Her mouth looked like a prune and even her smile was vinegary. "I watched them unload the van and there was no television. Besides," she said triumphantly, "if they had a set then where's the aerial?"

"Could be an indoor one." George ate the last of his toast and helped himself to coffee. "And what's so wrong in not owning a car? There's still a lot of people who don't own them."

"Not on Maple Avenue, there aren't. Even if they were nervous of driving they could use one of the robot models like I do. No, George, there's something funny about them." She meant peculiar, not

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amusing, but as George knew that she never found anything amusing he didn't make the mistake of assuming that she meant what she said. He sighed and glanced at his wrist watch.

" I don't like it," said Martha but from the expression in her eyes it was obvious that she did. " For all we know they could be spies or criminals or something. You've got to do something about it, George."

" Me ?" He blinked, even for Martha this was something new. " What can I do ?"

" You can find out about them, that's what. I'll do my share and I want you to do yours. I haven't lived here for twenty years without having a right to know who and what my neighbours are."

She darted to the window as footsteps crunched on the gravelled sidewalk running along the avenue. For a moment she tensed then, as the footsteps continued past the house and the one next door, she relaxed.

" And that's another thing. They never come out. I've only seen them once, when they first arrived, and that was a month ago."

" Who was that ?"

" Mr. Jorson, he lives five houses down. His wife's expecting again and they've had the doctor in three times during the past week." She rattled off the information as though she were an information machine and he had pressed the right button. Talking of the Jorsons seemed to remind her of something for she patted her frizzy, greying hair and brushed the front of her dress. " I think I'll just pop along and see if there's anything I can do." She stared hard at George. " Don't forget now, find out all you can."

He sighed again, but this time it was a sigh of defeat.

Their name was Randall and there were just the two of them. Both were fairly old and had arrived from a distant town. George gleaned that information from Fred Burns who had rented them the house and felt he owed it to the man to make some sort of explanation. They had known each other long enough for the explanation to be the true one.

" It's Martha," he said. " You know how women are. They get a bee in their bonnet and there's no shifting it."

" I know how it is." Fred nodded and looked sympathetic. " Well, George, that's all I can tell you. The whole transaction was done by mail and, to speak the truth, I've only seen them the once, that was when I handed them the keys."

" Thanks anyway." George hesitated. " How do they pay ?"

" By cheque on the Union Bank."

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" Regular ?"

" Bankers order. No trouble there, George." Fred seemed a little restless. " Tell Martha to quit worrying. They're just a harmless couple wanting somewhere to settle down and die."

George nodded. He knew that he had got all the information he could from the estate agent and, with the skill of long practice, changed the subject.

" Thank's again, Fred. How about you and Susan dropping over one night for a session ? Martha'll do the cooking and I could ask a few of the boys over to make it a real party."

" Martha's cooking !" Fred smacked his lips. " Sure ! Give me a call about it later, uh ?"

" I'll do that," promised George, and went about his business. He sold three policies insuring against damage caused by stratrockets, two endowments and one to an old man who was terrified of cremation. George was proud of the last because the company had their own burial ground and, as far as they were concerned, the premiums were sheer profit. When he arrived back home he was pleasantly tired after a profitable day.

Martha started in on him as soon as he had eaten.

" They have everything delivered," she said. " I managed to catch the delivery wagon and the man told me that they order everything by mail."

" Mail ?" George looked blank. " Why don't they use the phone?"

" I don't know," she said grimly. " The man said that everyone at the store talks about it. They are the only mail-order customers they have in town." She nodded as though her worst suspicions had been confirmed. " I found out their name too. Randall. It isn't in the phone book."

" It could be a private listing," said George, but the way he said it left no doubt that he didn't think it possible. A private listing yes, but who would bother to write a letter when they could just use the phone ? He told Martha what he had learned from the estate agent.

" I don't like it," she said when he had finished. " It isn't natural."

" They're old," he defended. " Old people aren't as spry as younger ones. Maybe that's why they haven't got a car or a television set." He didn't argue about the television set. If Martha had said they didn't have one then that was that. Aerial or no aerial she would have been able to recognise one by smell alone. Martha, to put it politely, was sharp.

" Fiddlesticks ! My folks are old but they have all those things. Lots of people are but they have cars and use phones. If you ask me it isn't natural the way they're going on."

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He hadn't asked her but it made no difference. George knew that he would be plagued by the next door neighbours until Martha's curiosity was assuaged to the full, and, despite his initial reluctance, he found himself becoming intrigued.

Maple Avenue was a perfect representation of its type. A row of houses filled with people of much the same income-bracket and all adhering firmly to a recognised pattern of living. The Randalls had broken that pattern and so, merely because of that, they stuck out like a sore thumb.

The more George thought about it the more his imagination began to work. A firm follower of the television soap-operas, a hungry seeker after vicarious thrills via the popular press, he, like all his class and most of his race, suffered from frustration and utter boredom. The Randalls, harmless as they must obviously be, yet presented a safe, snug little problem in detection. Who were they? What were they? Why didn't they use the benefits of modern civilisation?

George determined to find out.

Martha's sister had married a banker and so it was inevitable that the sole child of their marriage, a son, should work in a bank. That it happened to be the Union Bank was, George thought, a deserved coincidence. He invited the young man to lunch and, over a meal, began to delicately pump for information.

"It's a matter of business, John," he explained. "I'm figuring on selling the Randalls a big policy and, naturally, I'd like a hint of their financial background." He paused, waiting for John to first nibble, then swallow the bait.

"Well . . ." John seemed reluctant to betray the confidence of his clients. George was quick to sense it and even quicker to apply just the right amount of pressure.

"It's not as if I were a stranger, John," he beamed. "I could find out myself, of course, but I thought that you could save me a little time." He managed to give the appearance of hurt dignity. "After all, it's not as though my business wasn't respectable."

John nodded. Selling, no matter what product, was classed a little higher than banking and just under the medical services for the simple reason that the average salesman earned more than the average bank clerk and slightly less than the average doctor. That, to any right-minded man, made George's request both reasonable and right.

"They've got triple-A Dunn and Bradstreet rating," John said, and, having said so much, proceeded to say more. "We pay most of their bills by bankers order but sometimes they send for some cash."

"Much cash?"

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"No, not much, about what would be expected for small items and general expenses. Tips and so on."

"So financially they are a good risk." George nodded as though he had found out all he wanted to know. "You must have handled their account for some time then?"

"No." John hesitated. "As a matter of fact we haven't. Their account was sent to us from head office." He hesitated again. "From their file it seems that every time they move their account is routed via head office to a local branch."

"Reasonable." George shrugged as if it were of no importance. "How about income?"

"Paid into head office. I saw one of the cheques, it had got caught up in their file by mistake, it was from the Universal Drug Company and it was pretty big."

"Shares perhaps?"

"No. More like a pension I would say. I've seen share-cheques before." John stared at his uncle. "You understand that all this is confidential?"

"Naturally." George hesitated before asking the final question. "Do they move often?"

"The Randalls?" John shrugged. "Hard to tell but I'd say yes. We haven't got the complete file, remember, only what head office chooses to send us." He looked at his watch. "If there's anything else . . .?"

There wasn't and George said so. He lingered over his coffee after John had gone and, because he had time to spare, made one more call.

He was plausible, smooth, very eager to help and utterly baffled when the man at the electricity offices regretfully informed him that Mr. Randall did not and had not ever owed them money.

"But that's unbelievable!" George was more than startled, he was shocked. For a family in this day and age not to use electricity was as incredible as an eighteenth century gentleman who never spent money on candles. When he came to think about it the man obviously thought so too.

"Maybe they have their own generator?" he suggested. "Are you certain that Mr. Randall asked you to pay his bill?"

"He certainly asked me to pay a bill for him," said George. He grinned. "Still, if they don't use your current it can't be for that, can it?"

Outside the offices he paused to stare into the display window. It was filled with the essentials of modern living. Irons, washing machines, refrigerators, ovens, fans, heaters, bulb-lights and strip-lights, door

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chimes, blankets, radios, recorders, television sets, videophones, all and every one operated by electricity. To live without all or most of them was unthinkable.

And yet the Randalls used no commercial electricity.

George decided to go and see them.

There was no bell. Or rather there was a push-button but it didn't seem to be working. He waited for a while then, as nothing happened, rapped on the door with his bare knuckles. The impact bruised his tender skin and he was sucking his fingers when the door opened and a woman stared at him.

She was normal. She was dressed in a shapeless garment of rusty black and her face had a peculiar lost expression but she was human. George took his hand from his mouth, smiled, and went into his prepared routine.

Because he was a salesman and because he was good at his job he was inside the house with the door closed behind him before the woman had a chance to protest at the intrusion. Then, just as he suspected she would, she went to find her husband.

Alone, George took a quick look at the lounge.

It looked like a museum.

The furniture had gone with the house, obviously, but the furnishings hadn't. The curtains were of heavy brocade, embroidered and tasseled and looped back with plaited ropes. The chairs had little lace mats resting on their backs and arms. A great brass bowl held some green-leafed plant and, beside it was a swollen thing with a glass chimney and a round glass shade. George was still trying to figure out just what it was for when the door opened and the Randalls, both of them, entered the room.

The man, in his own way, was a carbon copy of the woman. Both had the same lost expression. Both wore ludicrous clothing, that of the man even more noticeable than that of the woman with its narrow trousers, the narrow lapelled coat, the collared shirt and thin tie. Both seemed almost as if they were terrified of their visitor. George tried to put them at their ease.

"Mr. Randall?" He beamed and held out his hand. "I'm representing the Acme Insurance Company and I think that I have something here which will interest you." He had no real hope of selling any insurance but the excuse had served to get him into the house. Mr. Randall cleared his throat with a dry, rasping sound, and looked at his wife.

"Insurance?"

"Yes. You know what that is, don't you?"

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"Of course." Randall gestured to a chair and turned to his wife. "A glass of wine, dear?" He smiled as she left the room. "I'm afraid that you're wasting your time Mr. ?"

"Prentice. George Prentice. Call me George."

"Very well, then. George. As I said I'm afraid that you're wasting your time. We have no real need for insurance at all."

"Nonsense!" George was really hurt. "Everyone needs insurance. To be frank, Mr. Randall, a man is a fool if he doesn't buy all the coverage he can afford. What if you should die?"

"Die?" Randall frowned as if the word should mean something but he had forgotten just what. His face brightened. "Oh, that! We don't have to worry about that, either of us." He looked oddly at George. "Pardon me, Mr. Prentice, but is there a carnival in town?"

"George," corrected George absently. "Carnival? No, why do you ask?"

"Well, your clothes." Randall seemed a little-embarrassed. "You must admit that they are rather unusual. I wondered . . ."

George wasn't shocked but he was hurt a little. Personally he considered his lemon blouse and green slacks with the maroon sash and matching sandles as rather conservative. Not a bit like the polka dot styles the younger set were wearing or the striped patterns favoured by the manual workers. If anyone in town was oddly dressed it was the Randalls. He was about to say so when Mrs. Randall returned with the wine.

It was good wine. It had a rich, fruity body to it and was surprisingly potent. Sipping it, George wondered why the wine he bought from the store never tasted anywhere near as good. He asked Randall what it was.

"Elderberry," said the man. "Mary made a batch last year, she's good at that sort of thing." He held up his glass and looked at the dark red fluid. "I must say it's some of the best she's ever made."

"It's wonderful!" George held out his glass for more. "Now, Mr. Randall, about this insurance of yours. You say that you are already insured against death?"

"Yes." He glanced at the woman. "I don't think that either of us need worry about that."

"Good coverage." George nodded. The wine had gone to his head a little but, even so, he remembered who he was and why he had come. He saw no reason to waste an opportunity. "I'd like to have a look at those policies of yours, Mr. Randall. I might be able to suggest something to your advantage. Quite often I've been able to

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convert an old policy into a new one with great advantage to the policy holder. Do you have them at hand ?"

" Policies ?" Randall blinked and again smiled in his secret way. " I believe so. Mary, dear, could you get them for Mr. Prentice." He smiled at George as she scuttled from the room. " I doubt if you'll find anything of the slightest interest in them. Personally I doubt if we'll ever gain anything from them."

" You can never tell," said George sententiously. " Anything can happen and it usually does when least expected. Take a claim I had to settle last week. Debris from a stratrocket smashed the roof of a house. A billion to one chance, you say, but it happened. Fortunately my client was insured and so suffered no loss." He stretched out his hand as the woman entered the room. " These the policies ? Thank you."

He took them and leaned back in his chair as he studied them. They were old, the paper yellow and brittle with age. Gently he unfolded them, marvelling at the thick, black-letter type and the generally poor lay-out of the text. He jotted down the name of the company and the numbers of the policies in his memo-book, and then idly scanned them for relevant information.

He boggled at what he read !

The policies were both the same. They were of a single-premium type with a ridiculously low pay-out value. From what he gathered they had been given away on receipt of the premium and the signed promise to subscribe for the following ten years to a particular newspaper. There were blanks, now filled in, for the name and age of the beneficiary and the date of the policy was in more of the ridiculous black-letter type.

Carefully he folded them and handed them back. He finished his wine and promised to look into the matter for them. Randall demurred but George waved aside his objections.

" No trouble, no trouble at all. I only live next door so I can pop in at any time." He pretended to think about it. " Look, I'll check up and drop in to-morrow evening. We can talk about it then."

He smiled and nodded and walked out of the house. He was still affected a little by the wine and it wasn't until he was almost home that it struck him. He halted, one hand half-outstretched to the lock-plate, and stared at the silent house he had just left.

The date on the policies had been 1887. The age of Randall had been 45 and that of his wife five years less. If what he had read had been the truth that made the both of them about a hundred and fifty years old. ! !

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He didn't talk much to Martha that evening but, by next morning, George had convinced himself that he had made a mistake. He blamed the wine, that and the unusual furnishings of the lounge and the odd clothing of the Randalls. Anyone could have noticed a wrong date or age and, the more he thought about it, the more convinced he became that he had mis-read the policies.

Down at the office he made the routine check and received his second shock.

"These policies went out with the Ark," said Edwards, the check-file clerk. He stared at the memo George had passed to him. "Where did you dig them up, in a junk shop?"

"No, why?"

"Because they aren't worth the paper they're printed on. It was a newspaper stunt, one of several they tried to boost circulation, and I believe they actually paid out a few of them. They had their own cover, of course, but the policies lapsed when the newspaper went out of circulation." He handed back the memo. "Someone's trying to play you for a sucker," he grinned. "Hope they didn't take up too much of your time."

"Not too much," said George. He was bitter both at himself and at the Randalls. Obviously they had passed him a couple of heirlooms, probably taken out by Randall's parents, and the more he thought about it the more upset he became. The joke was in the worst of taste because it had both wasted his time and, more important, made him look foolish before the check-file clerk.

He determined to see the Randalls and complain.

Pressure of work kept him until dusk and it was almost dark before he was able to knock on the door of his neighbour's house again. As before the woman opened it and, as she did so, a flood of soft yellow light streamed out from over her shoulder.

"Good evening, Mrs. Randall," said George heartily. "Sorry I'm late but I had a little trouble checking your policies."

She stared at him without the slightest trace of recognition.

"You remember me," he urged. "I called to see you yesterday. I'm your neighbour."

"Are you?" She still didn't seem to recognise him but, with true feminine helplessness, allowed him to enter the house while she fetched her husband.

The lounge looked just the same but this time George found out what the glass-chimnied thing was for. It was a lamp, the source of the soft yellow light, and his nose wrinkled to the rank smell of burning oil.

Randall didn't know him either.

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He stood by his wife, their hands defensively clasped together, and stared at George as if he were a lunatic or a criminal.

"Look," said George slowly. "I called on you yesterday. I live next door. You showed me some insurance policies. Now do you remember?"

"I've never seen you before in my life," said Randall stiffly. He seemed nervous. George sighed and tried again.

"I sat in that chair and we talked for quite a while. Why, you even gave me some of your wine, elderberry, you said it was." He stared at their blank expressions. "Damn it all! I was here, I tell you!"

"I don't know who you are," said Randall, "or why you are dressed like that, but you have never been inside this house before. I have never offered you wine nor spoken with you. I suggest you leave now before I am forced to send for the police."

"Why send for them," said George sarcastically. "Why not phone"

"Phone?" Randall glanced at his wife. "Do you know what he is talking about, dear?"

"Forget it," said George disgustedly. "You don't know what a phone is, you don't use electricity, you wear clothes straight from a museum." He slapped his pocket and grinned. "Well, I can prove you wrong in one thing. I have here the numbers of your policies. Now, I couldn't have got those without you showing them to me, could I?" He produced the memo and handed it to Randall. "Will you check?"

He waited while the woman scuttled out of the room to fetch the papers and, when she returned, he waited as Randall checked his slip against the numbers.

"Well? Am I right?"

"They match," admitted Randall. "But that proves nothing."

"It proves that I've seen the policies," pointed out George. He took a deep breath. "They are your policies, aren't they?"

"Yes."

"I see." The joke was wearing thin and George was losing his temper. "Just when did you take them out?"

"About five years ago." Randall moistened his lips with the tip of his tongue and George suddenly became aware that the couple were afraid of him. "It seemed a good investment at the time but I don't think we'll need it now."

"No? Why not?" They didn't answer and George didn't waste time. "I don't know what your game is," he said grimly, "but it isn't funny. I'm a respectable business man and entitled to common courtesy. If you took out those policies five years ago that would make your age about fifty. Right?"

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"Yes."

"And it would make the date . . . 1892. Right?"

"Of course." Randall looked at him as though George were something from an asylum. "What date did you think it was?"

And that was that.

He had argued, of course, but it had been a waste of time. Randall had insisted that they had never before met. He had insisted that the date was 1892 instead of 1987 which it was. George was used to stubbornness, he had met and overcome men who emulated mules in that respect, but he had finally had to admit defeat. Because Randallt had been telling the truth as he knew it and, the more George though about it, the more fantastically logical it became.

Quite literally the Randalls were living in a mental world of the last century.

The intriguing part was why?

George began to do some investigating.

It wasn't too hard and yet, at the same time, it wasn't too easy. For anyone else it would have been impossible but the web of the intermeshed insurance companies had spread to cover every man, woman and child in the Western Hemisphere. George had access to the blacklists, the accident prones, the group analyses and the statistical extrapolations of every age-group and income-bracket there was.

And he had the starting point of the original policies.

Sam and Mary Randall had lived and worked in a small town during the years of 1875 to 1892. They had worked for a chemical firm which later had expanded into the Universal Drug Company. They had later moved to another small town towards the west coast.

A fire insurance policy had been taken out by their late firm to cover their new home.

They had lived there ten years and then moved again.

Another policy had then been taken out for the same reason and by the same firm.

And so it went on.

It took a long time and George kept the check-file clerks in a state of wonderment as to his sanity, but the investigation paid off. The Randalls, like it or not, were a hundred and fifty years old and were the same people who had taken out the original life-insurance. And that, incidentally, was the only life-insurance they had ever taken out.

George wasn't dumb and he had a good imagination. He was in a business which dealt with probability and statistical analysis and was as able to extrapolate as well as the next man. So the logical assumption of what he had learned didn't upset him in the least.

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Immortality.

Or, if not exactly that, then something very much like it. He had seen the Randalls and, though they looked old, yet they only looked as old as they had been, not as old as they should be. People had aged more back in the last century. Since then modern medicine and hygiene had lifted the life expectancy to almost double what it had been a hundred and fifty years ago. They merely looked as old as people of their age did when they had taken or done whatever it was that had kept them alive when they should have been dead. The extra hundred years hadn't aged them at all.

Would a thousand ?

Would ten thousand ?

Would a million ?

George was still thinking about it when his door opened and a man walked into his office. He entered unannounced which was bad, and he walked with an innate assurance which was worse. George could recognise authority when he saw it and he knew that he was looking at it now. The man wasted no time.

" You are George Prentice and you live next door to the Randalls on Maple Avenue. You have been making some investigations as to your neighbours. Why ?"

" Who are you ?"

" Does that matter ?" The man smiled with a hint of iron beneath the velvet. " If I tell you that I'm connected with the Universal Drug Company, will that help you ? If I also tell you that I'm in the position of being your boss, will that help you more ?" He leaned forward across the desk. " Please understand me, Mr. Prentice. I wish you no harm. I cannot force you to answer my questions but, if by so doing, you find yourself out of employment, blame yourself, not me. Well ?"

George told him.

Strangely enough the man wasn't surprised. He listened and, when George had finished, he nodded as if admiring a neat piece of deduction.

" You are right. The Randalls are potentially immortal. Naturally you are thinking of acquiring the same immortality for yourself. If you are, then please believe me when I tell you to dismiss the thought completely from your head."

" Why should I ?" George hadn't really thought it out as far as that but, when he heard the other make the suggestion, he realised what he had discovered.

" You have seen the Randalls," reminded the man. " Hasn't anything struck you as strange about the way they live ?"

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"Of course. It was that strangeness which first made me suspicious."

"Exactly. Would you care to live in the same way?" He continued before George had a chance to answer. "You see, the type of immortality which they have was discovered quite by accident. The . . . serum, was perfected late in the last century and the Randalls acted as guinea pigs. I won't go into details but if I tell you that the serum, though it isn't a serum, has the power of restoring the body cells to the status quo after a period of twenty-four hours, you may know what I mean. All the cells, Mr. Prentice. In effect the process of aging and degeneration of the entire body is wiped out during each day." He paused. "Memory, Mr. Prentice, comes beneath the heading of cellular damage."

It was, when you came to think about it, obviously simple and perfectly logical. Each day the Randalls aged a little and, each night, that age was wiped out by the serum. The trouble was that their memories of that day were also wiped out. Memory is cellular damage. That damage was erased. With the erasure went the memories of the previous day.

"Yes," said the man gently. "It's rather horrible to contemplate, isn't it? The serum itself was one of those discoveries made in the search for something quite different. We were after a cancer cure at the time, I believe, at least the founders of the firm were, and no one was more surprised than they to see what had happened. The Randalls remained static. They could not remember anything after about a week past the injection. It took that long for the serum to take hold. In effect they are frozen in time and each new day brings bewildering terrors. How would you feel if, each day, strangely dressed men spoke to you of things you knew nothing about? Wouldn't you tend to remain isolated? Wouldn't you be afraid and upset all the time?"

George nodded. His imagination was working and he could see all the flaws and snags. What was the good of living forever if, in effect, all you did was to relive one day after the other?

"We look after them, naturally," said the man. "They are pensioners of the firm and, though we can never undo the harm we have caused them, yet we try to make things easier for them. One day, perhaps, we'll find the antidote and give them the natural ending they should have had years ago." He rose and smiled down at George. "I'm sure that you'll respect my confidence. After all, who would believe you if you told them?" He smiled again and then as abruptly as he had arrived, he left.

George sat and did some heavy thinking.

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Immortality was out, he didn't want it at that price, but wasn't there something else? He smiled. There was. With the memory set-up they had it would be the simplest thing in the world to sell them fresh insurance each day. Simple because they would forget that they had ever bought a policy from him before. And, with his business skill and knowledge of their ways, he would be able to talk them into everything from endowment to earthquake, drain-damage to deterioration. He wouldn't live forever, but he would be rich!

But he wasn't.

By the time he managed to call, the Randalls had moved and he never did find out where they went.

Alan Guthrie.

THE LITERARY LINE-UP

As this issue of *New Worlds* is going to press considerably earlier than usual, owing to the advent of the Christmas holidays in December, it is not possible to give details of next month's lead story, which has not yet been chosen. Of necessity therefore the short stories have not been decided upon either. But there is plenty of material in hand to ensure the usual high standard.

Meanwhile, *Science Fantasy* No. 17 with a long novelette by Brian W. Aldiss should be on sale at the same time as this issue you are reading, or immediately afterwards.

Story ratings for No. 40 were :

1. Stormhead - - - - - - - - Francis G. Rayer.
2. The Time Masters (Part II) - - - Wilson Tucker.
3. Little Girl Lost - - - - - - - E. C. Tubb.
4. The Con Game - - - - - - - Lan Wright.
5. Rock 83 - - - - - - - - Alan Barclay.

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As we have stated several times before, there is far too little humour in science fiction—such stories add a light, if somewhat zany touch, to a medium which is too often overloaded with seriousness. New author Lamont's style is moving steadily along the road of popularity as the following 'gadget' story will prove.

MAGIC TOUCH

By Duncan Lamont

Jancy Cleamer was a designer at the Blanclave Development Corporation, and a good man with paper, pencil, and protractor. He could take the most awkward-looking gadget and fiddle it down to a neat little box with a button on the top: press and it goes, press again and it stops. The Research and Development boys with their transistors, printed circuits, nine-point triple triode valves and other wonders produced the marvels; but it was Jancy who reduced them to a marketable condition. He could take their monstrous prototypes, and smooth and file away at the blueprints until they were unrecognisable—but easy on the eye, and the production line. He was a positive genius at his job.

But being a genius has its drawbacks: Nature seldom deals a full house. Allied with Jancy's paper perspicacity was a depressing poverty of practical application. The hands that placed and drew a dial with firmness and precision seemed congenitally incapable of turning the finished product to its correct position.

Jancy's wireless set was *always* just off the station; his television screen perpetually blurred. He carried a box of matches in his pocket—because his cigarette lighter consistently refused to function. He walked to work—although he could well afford a car—because his feet appeared to be incapable of differentiating between the accelerator and the brake. His attic at home was overloaded to the point of danger with a miscellany of irrepairable gadgets that had succumbed to Jancy's Magic Touch.

Jancy's Magic Touch: that's what they called it around the plant. Jokingly, of course, for Jancy was a good man at his job, and fairly well liked. But it was a well-established legend, and

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anyone who boasted of producing a fool-proof piece of machinery was liable to be sent post-haste to the Designers' Office. The vast majority returned bitter and disillusioned men.

The effect of all this good-natured banter on Jancy was difficult to ascertain. He took it all in good part, but there was an edge to his laughter, and he always changed the subject as quickly as possible. For, deep down inside, his mechanical inaptitude worried him continuously: he considered it personally inexcuseable that a citizen of the Golden Machine Age should be so . . . handless.

This subconscious fight of his against his infirmity—for it was nothing less—had a lot to do with what happened one fatal day. He was rapidly reaching the stage where every set of controls was a personal challenge. If he hadn't won-out when he did, he may well have ended up in a mental home.

The fact that his victory almost sent the entire personnel of the Research and Development Section into that self-same establishment is purely irrelevant.

In room number eleven, on the fifth floor, of the southern wing, of Research and Development, a faintly acrid atmosphere was discernible. The explanation for this unaccustomed tainting of the welkin was not far to seek—Strumner and Mallinson had finished their task in hand. The Supersonic Waterless Washing Machine was finished.

Yet another burden had been—or was about to be—lifted from the shoulders of the average housewife. No more washday worry about which detergent should be used. The Supersonic Waterless Washing Machine simply vibrated the dirt loose from the fibres, separating it neatly from the airblast in a cyclonic dust trap. No water, no soap; just place the clothes in the container provided, press the button, and—*presto!*

"It's beautiful!" said Strumner vehemently. "Consider the lines. And you know what these designers will do?"

Mallinson nodded intelligently. "Sure. They'll pack it into a square box scientifically designed to fit into an odd corner of the kitchenette, thereby saving space, providing an additional selling point, and getting rid of twice as many models per annum." He leant down from his six feet two and a half inches and patted the object under discussion consolingly.

Strumner's dark eyes flashed. "Why do we do it? Why don't we apply for a transfer to Propulsion?"

Mallinson sighed. "Again?"

His partner's short, thick-set figure bristled visibly. "Why not?"

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"You know as well as I do that Blunger wouldn't look at it. He's got his rocket boys picked and that's that. The only thing to do is wait until some of them blow themselves to pieces."

Strumner regarded the machine indignantly. "When I think what these morons in Design'll do to our prototype . . . " He reached for a cigarette with trembling fingers. "We slave away producing a thing of functional beauty, only to have it warped and twisted into another box with buttons. It's heartbreaking! "

Mallinson parked himself across the vibrator unit of the machine —it made a very convenient seat—and regarded his companion sombrely. Strumner, he knew, had never got over that course in Functionalism which some misguided pedant had injected into his final training year. Those few lectures had changed him from a contented engineer into a frustrated designer. The only reason Strumner wanted a transfer to Propulsion was to get away from Design of the Blanclave variety. They didn't fiddle with the sort of work where every curve was painstakingly calculated to fulfil a purpose. No one would dare to touch a prototype drawing in that class of work.

Strumner was smoking rapidly, his thoughts a churning mass of grievances.

At this crucial moment there was a knock on the door. It opened—and admitted Jancy Cleamer.

"Excuse me," he said politely. "I'm looking for Traille—it's about this blueprint." He waved the latter, like a red flag, in Strumner's direction.

"Wrong floor, Jancy," said Mallinson. "One up."

"Thanks," replied Jancy, and turned to go.

Strumner's eyes were fixed on the blueprint. He stopped smoking, and said: "Like to see our latest, Jancy? The prototype's just finished and functioning. You'll be getting a drawing of it, no doubt." He grasped the designer by the sleeve and propelled him towards the machine.

"Looks fine," said the latter half-heartedly. In actual fact, he considered it a horribly shapeless mess of cones and cyclinders with at least two buttons too many. But, after all, it wasn't his professional opinion that was required.

"Would you like to try it? " asked Strumner cunningly.

Jancy looked at the door despairingly. "Not really," he said. "I haven't much time to spare. It's getting late, and . . . "

"Now, now," said Strumner reproachfully. "Our brain-child, you know. We should feel insulted. After all, you are the resident tester,"

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Jancy's features flared, and Mallinson said testily: "Leave him alone, Johnny. If he doesn't want to try it, fair enough."

The designer pulled his sleeve loose from Strumner's grip. "Where do I sit?"

Mallinson's mouth gaped, and Strumner's closed angrily. They both regarded the machine closely. There was, they finally admitted silently, a certain justification for the remark. The rump-like solidity of the airpump flowed into the barrel-shaped body housing the vibrator, and terminated in a cyclonic dirt extraction unit that bore some resemblance to the forward-looking portion of a quadruped.

A wicked thought stirred in Strumner's mind.

"In the middle, naturally," he said. "Legs astride. Here, I'll give you a hand."

The offer was unnecessary. Jancy stationed himself firmly astride the Supersonic Waterless Washing Machine. His feet trailed the floor and his hands hovered over the three buttons set in a small panel on the cyclone.

"Hi-ho, Silver!" bawled Mallinson delightedly.

Jancy commenced to dismount, but Strumner pushed him firmly back into position. "Pay no attention to him," he said. "It's the heat."

"No it's not," denied Mallinson in a half-choked gurgle. "It's the humidity."

"Right!" said Jancy angrily. "Let's get it over with. What do I do?"

Strumner leant confidentially towards him. "It's just a rough prototype, of course," he said. "The finished article will be much fancier. Wings, you know—and a head."

"Pegasus!" ejaculated Mallinson joyfully. "A flying horse for the kiddies. The ideal Christmas present."

"You just press the right hand button," Strumner said intensely, "and it floats off the ground. It's a winner."

For a moment Jancy Cleamer didn't really take them seriously —in the conscious, reasoning part of his mind—but down in the tortured abyss of his subconscious, *something clicked.* His thumb stabbed viciously at the left hand button (even in his hour of triumph he pressed the wrong one) and the Supersonic Waterless Washing Machine rose majestically into the air.

It was an historic moment, and viewed in retrospect it seems a pity that it wasn't celebrated with due pomp and ceremony. There were no flags unfurled, no brass bands, no speeches; even the small audience privileged enough to be present was in no fit condition to

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raise a cheer. For—by a perhaps forgivable oversight—the first anti-gravity machine produced by man was bolted to the floor.

Mallinson's first thought as the floor heaved beneath his feet sending—or so it seemed—the Washing Machine towards the roof, was: "We'll have to gear down that airpump." His second, as the floor cracked neatly around the machine and it continued rising, was: "The Propulsion boys have done it this time—perhaps we'll get a transfer after all." His third, as the weakened foundations collapsed, sending the loboratory and most of its contents cascading onto the floor below, was quite unprintable.

The emergency services of the Blanclave Development Corporation rose to the occasion magnificently. Within minutes, the building was surrounded by fire-engines, portable water pumps, ambulances, and a scurrying mass of blue-uniformed and helmeted employees. They were watched with interest by a white-coated fringe of evacuees. In the midst of the bustle, Research Director Blunger conversed agitatedly with the fire chief.

With bated breaths the spectating portions of the congregation regarded the now-deserted building. It returned their collective gaze blandly from a multitude of blank glass windows. Apart from a few optical cracks around the fifth floor it was disappointingly undamaged. No tremors shook its sturdy walls, no flames licked avidly around its battlements.

"It *seems* quiet enough," observed the fire chief dubiously.

Blunger, his small, plump figure still quivering after the frantic rush from his first floor office, struggled afresh for breath. He was a methodical, over-precise individual with the compartmented type of mind cultivated by all the better-class administrators. At the present moment he was feverishly hunting through the shelf marked "emergency."

"We'd better check if anyone's missing," he pronounced at last.

A hurried check revealed the absence of Mallinson and Strumner.

"That's the fifth floor," announced Blunger.

The fire chief turned to his minions, and three helmeted figures entered the building. In due course, a signal from above sent further figures, armed this time with stretchers, into the main entrance. Ultimately, a procession emerged bearing in its midst the recumbent forms of the two missing men.

"Everything's O.K.," advised the leading fireman. "Just one of the fifth floor labs slipped down a storey. This pair seem all right too. Just knocked out, I think. No bones broken."

"Good," said Blunger with relief. "Shall we inspect the damage, Chief?"

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Together they mounted to the fourth floor and surveyed the pulverised pieces of equipment so summarily ejected from room number eleven.

Blunger sighed. "Two labs wrecked and a hundred man-hours wasted. This'll ruin my weekly budget figures. Is it safe enough to start work again?"

The fire chief tore his gaze away from the newly provided sun-roof. He swallowed harshly and said: "Would you come and look at this?"

Blunger came and looked. The official reports of the incident on file describe his expression as awe-struck. These reports were, of course, vetted later by Blunger himself. Considering that the sight which impinged on his optic nerves was utterly incapable of being fitted into any of his numerous compartments, it seems a more fitting description. In any case, no stretch of imagination could describe a worm's eye view of Jancy Cleamer astride a metallic parody of a cowboy's best friend, as awesome.

Jancy was shaking his head violently; at frequent intervals he attempted to dismount, glanced downwards, and hurriedly returned to his perch. His fingers darted uncertainly over the control panel, but he didn't press any buttons. This was hardly to be wondered at.

"Cleamer!" roared Blunger, when he had recovered his powers of speech. "Come down here at once, and explain what all this is about."

Jancy's head, ridiculously foreshortened, peered down at them. "I can't, Mr. Blunger," he said querulously. "I'm stuck."

His point was well taken. His interrogator looked around wildly for assistance. The fire chief, his professional training standing him in good stead, suggested a ladder, or, perhaps, a rope. In response to an appeal from the corridor window, one was brought up. On the third attempt, the chief succeeded in lassoing the cyclonic dirt extractor. After a few futile attempts to bring the machine down to ground level, Jancy climbed down the rope.

"What," demanded Blunger indignantly, as soon as the designer touched down, "have you done to our Supersonic Waterless Washing Machine?"

Jancy looked him straight in the eye—until this piece of information sank home. Then he collapsed gracefully into the arms of the fire chief.

A furious slanging match was in progress in the Casualty Room. Strumner was leaning out of his bed, his dark features flushed to a steady red glow. Blunger was standing in the middle of the room like an irate customer at a find-the-pea pitch. He *knew* all the shells were empty.

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"This," he was saying, "is just some ridiculous trick to get yourselves transferred to Propulsion. I've a good mind to fire the pair of you. Wasting the firm's time fiddling around outside your own field. A washing machine was your task, not a . . . "

"You say," said Mallinson, taking advantage of the Research Director's hunt for words, "that it's just floating there with no visible means of support?"

"Yes."

"But that's impossible. We've had it running practically all day. There was nothing peculiar about it."

"Are you calling me a liar?"

"No," replied Mallinson hurriedly. "But in that case we've produced an anti-gravity machine."

There was a sudden silence that grew and grew . . .

"Impossible," said Strumner weakly.

But Blunger had seen the light, and in the silence his mind was busy creating a new compartment. It wasn't easy, but he made it. Then he proceeded to cram the facts into it. His administrator's mind digested and extrapolated rapidly. He wiped the sweat from his brow and ran for the 'phone.

It's surprising how easily an idea can take root and become so fixed and immutable that no one dare question its validity. Blunger was convinced that Strumner and Mallinson, by some accident of wiring or construction, had indeed created an anti-gravity machine. He now proceeded to fix this dogma in the minds of all around him. He succeeded remarkably well. Jancy's part in the incident was dismissed as purely accidental—in any case, there are only seven possible permutations of three buttons.

From that day, Blanclave's practically disappeared from the commercial world. Every brain in that large concern was bent on elucidating the great discovery. The prototype Supersonic Waterless Washing Machine was examined with every instrument known to science. The Research and Development Section was rebuilt around it. It had to be, for the machine seemed quite content to maintain its status quo at three feet one and three-quarter inches above the general level of the fifth floor. It could be coaxed sideways, but up or down it refused to move.

Replicas were built in profusion. The employees' clothes were never cleaner. But no further anti-gravity machines were produced.

In a final despairing effort, the prototype was dismantled. This, if anything, should have convinced them that the observed effect was imposed rather than a natural function: for each piece main-

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tained its fixed distance from the ground below. But Blunger persisted, dragging an apprehensive, but eager, Board of Directors with him; and the experiments continued.

The end was inevitable. Five years later, its financial structure moth-eaten by incessant demands for money, Blanclave's went bankrupt.

Everything was sold at throw-away prices—except the prototype. It was bought—despite Blunger's frantic protests—by a world-famous circus; and at a fabulous price that practically covered all losses.

There was quite a turnout the day they towed it away; and quite a flurry of lawsuits when they discovered, that with the rise of the land around the plant, it was impossible to move it more than four miles from its point of origin. However, the money was paid by then, and the circus had to make the best of a bad job by running excursions out to view it.

When the big anti-gravity hunt got under way, Jancy slid into the background. The designers had a thin time of it in the next few years, and finally he quit and got a job elsewhere.

His first intimation of the failure of Blanclave's was when he arrived home one evening and saw a Supersonic Waterless Washing Machine sprawling gracelessly against the kitchenette sink.

"I got it at a sale, dear," said his wife brightly. "It didn't cost very much and they get through the washing in no time."

Now Jancy, ever since his encounter with the prototype, had found gadgets much more tractable. Some block in his mind seemed to have dissolved, leaving him more or less as other men. He no longer shunned the pressing of buttons, twisting of dials, and flicking of switches. He did his quota merrily and with a light heart.

"I remember these quite well," he said. "The first model had a most peculiar quirk in it. It floated into the air when you pressed the starter button. I wonder if this is the same type."

"I remember," said his wife rather shortly. Jancy had possibly, down the years, overestimated the entertainment value of his great experience.

"It's a bit of a nuisance where it is, dear," she continued sweetly. "I was wondering if you could move it up onto the old kitchen table—it would be out of the way there, and just the right height."

"Certainly, dear," said Jancy.

He pressed the left hand button and manoeuvred the gently rising machine into position.

Duncan Lamont.

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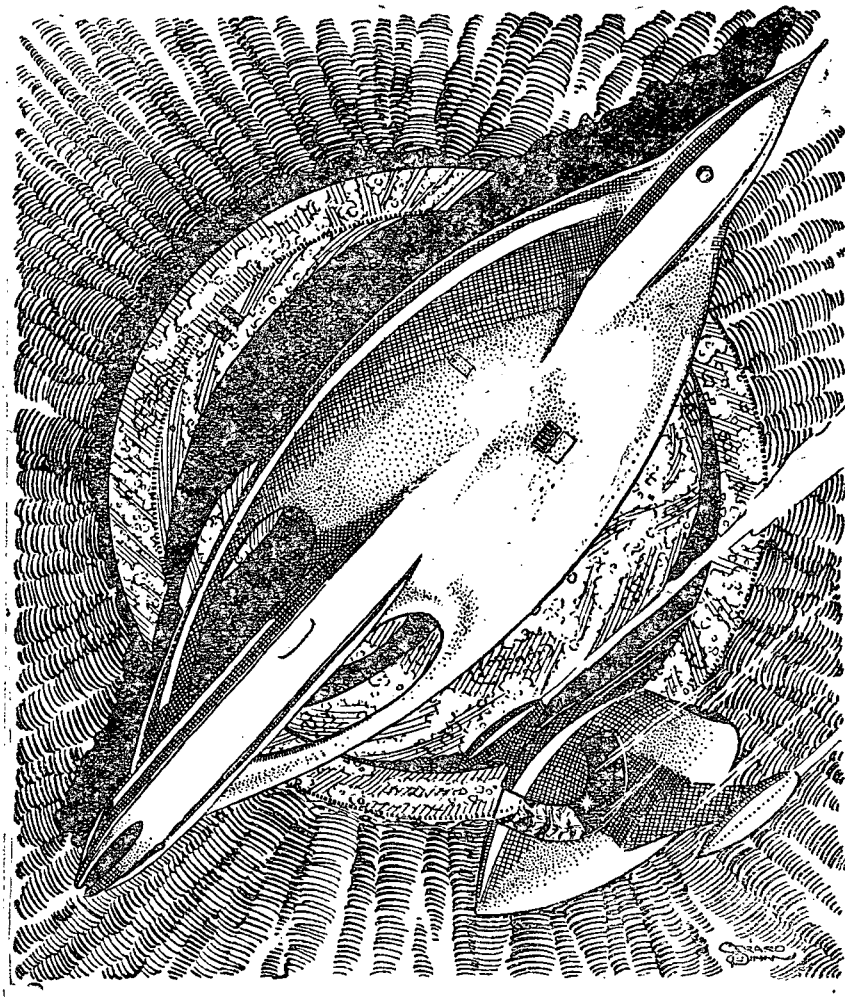

RED ALERT

It is pleasant to welcome James White with another of his long thought-provoking stories—this time concerning an alien invasion, but told entirely from the alien's viewpoint.

By James White

Illustrated by QUINN

For several minutes after the main fleet emerged into normal spacetime somewhere within the orbit of Pluto, the flagship drove through the grey unreality that was hyperspace. They were four days of first-order flight away from the objective which Everra would reach in seconds, and despite his coldly logical evaluation of the rewards and risks involved, he wished suddenly that he'd held to the old and well-tried tactics usual in operations of this sort. A Commander was not supposed to desert his Grand Fleet like this.

Though technically, thought Everra di Crennorlin-Su, Governor of three inhabited solar systems and temporarily Commander of a task force comprising three thousand one hundred and twenty-seven units, he was simply leading them. If the operation was successful nobody would remember how long that lead had been.

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The greyness around his ship dissolved into the blue-green globe of Earth three thousand miles below, and he was committed to a course of action which was unsafe, unprecedented, and most probably unsane. Everra made a small noise of self-disgust to himself as he activated the communicator. His particular form of insanity wasn't rare. It was called ambition.

"Have the advance scouts report, please," he said gently, and waited.

Everra had placed the planet under surveillance from the earliest moment after he had been assigned the Earth operation, and it had been one of the initial observations which had given him the idea for his present strategy. During the organisational nightmare of gathering and fitting-out his mighty fleet for their special mission, those reports had continued to come in, and their significance had not changed. Everra had been given a very dirty job—one where a ninety-five per cent loss would be acclaimed as a tactical triumph. But if he could reduce that percentage, or maybe even reverse it, then Everra would go very far indeed. The reports had shown a way in which this might be done.

Five per cent loss, he gloated.

The view-screen on his control desk lit up, and a scoutship Captain hurriedly went through the rituals of respect due to his high rank. "Our analysis of the planet's war potential is complete," he said. "None of the nations maintain large standing armies, but each physically suitable male undergoes at least two of their 'years' military training, so they can be expected to submit readily to authority. The leading 'nations' have large fleets of surface vessels, which we can forget, and a considerable number of transonic atmosphere craft, which we can't afford to—they're dangerously fast and can carry atomic weapons . . . "

Unconsciously, the Commander swayed forward in his couch. This was the important part. If Earth should become prematurely suspicious, and use those weapons on his fleet . . . Everra didn't like to think about the probable results.

". . . We have detected and marked the sites of all their nuclear armories," the scoutship Captain went on. His voice was very brisk, very clear, and very much aware that it was addressing, personally, a Su Grand Fleet Commander. "But these are no longer kept fully alert; the Earth civilisation is in transition between Stage Six and Seven—nuclear power but as yet no spaceflight—and the war tensions common with early Stage Six are dying out."

We'll soon fix that, the Commander thought grimly.

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The officer ended by reporting that a Human high-altitude research group had launched an unmanned rocket into an orbit just beyond their atmosphere, and the Commander's flagship would pass near it in a few seconds time.

—

Interesting, Everra thought. He liked to see the ludicrous mechanisms that a race first put into space. But his pleasure changed to sudden alarm. That was a research rocket, telemetering all sorts of data to its ground control. Suppose it was able to detect his flagship!

"Armaments!" he said sharply.

"Destroy, or take it aboard?" the Armaments Officer asked quickly. He'd been listening, and was already touching a firing stud.

"Destroy, but quietly," Everra said. "An atomic explosion out here would make them suspicious. Use a chemical warhead . . . No, wait!"

Everra's mind flashed over the implications of a nuclear explosion out here to the owners of this research rocket, and he abruptly reversed his previous order. He added, ". . . And put out the refraction screen, we don't want to be caught on their ground radar."

A picture of the Earth rocket flicked onto the Commander's view-screen, sharp, clear and dangerously close. Suppose its instruments had already detected his ship, and relayed the information to the ground? Everra suppressed his growing apprehension: he couldn't know whether he was detected or not, so he must proceed as though he hadn't.

His screen darkened suddenly as a filter snapped into place, then blazed white as the missile found the orbiting rocket. Their was a slight tremor as some of the vaporised debris brushed the Flagship's hull.

Everra felt pleased with himself. As he now saw it, the destruction of that orbital rocket could mean just one thing to the nation which had launched it—another nation did not want them to achieve spaceflight. A nation, moreover, with the disquieting ability to send an atomic missile into space to destroy it. Only two other nations had the technology capable of doing that, and one of them had quite recently been this nation's idealogical enemy. Could it be that their peace overtures were just a sham, and they were still secretly arming themselves with long-range nuclear weapons?

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And the weaker nations would wonder at that explosion, too, and feel suspicious, and afraid. Encountering that orbital vehicle had been a stroke of luck, Everra realised. The seeds of dissension were already well planted before he had even landed on the planet.

The natives had a saying down there: Divide and Conquer. Ever since that accursed trading ship had run through Sol, then returned to investigate and report the Earth civilisation which it had found, The Commander had thought what a brilliant concept that was. It was going to save an awful lot of lives.

Curtly, he gestured to his Communications Officer that he was ready for the next scout's report.

The second Captain was an Elissnian, who required an interpreter, so the Commander's screen remained blank. He didn't mind that at all, because the sight of the Elissnian body, with its multiplicity of legs, arms and appendages, sometimes upset his digestive tract. What bothered him was the unavoidable slowness of communications made necessary by the sign-language they had to use when speaking with non-telepaths. But the Elissni were sensitive to trends and motivations in large and small population groups, an ability which made them the most efficient social technicians and mass psychology experts in the Galaxy. Everra had been lucky to get so many of them at such short notice.

The Elissnian reported that his analysis of the economic and cultural stresses present on the planet—both current and those likely to develop through the Commander's intervention—was almost complete; also, all scoutships and smaller craft now carried at least one Elissnian telepath, so that the Commander could receive detailed on-the-spot reports from any sector.

The reports came in quickly after that. He learned the names of oceans, continents, countries and most of the chief cities, together with their locations. He already had data on their systems of time and distance measurement, and had been forcing himself to think in those divisions for the past two days. It avoided the confusion of constant mental translation when overhearing data in an Earth language. Everra had to know this planet, its strengths and its failings, like a native. His success depended on it.

As his mighty Flagship slid into Earth's atmosphere and dropped towards the North Polar icecap, Everra thought of the tremendous fleet converging on this third and inhabited planet of Sol, and wondered wryly if it would have a Commander when it arrived.

Three miles above the grey, storm-tossed Atlantic, an aircraft droned steadily across a white monotony of cloud. The whine of

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its four turbo-jets gave an angry, impatient note to the thunder of its passage, though only a whisper penetrated to the sound-proofed passenger compartment. Neither were its passengers aware of the life-ship from Everra's Arctic base which, rendered invisible by its refraction screen, paced it a few hundred yards away, and they were happily ignorant of the instruments focussed on them which made every thought, word and action plain to the alien observers.

Especially those of a uniformed Human with a diplomatic dispatch case chained to his wrist.

Suddenly the aircraft seemed to stagger in mid-air. The engines died abruptly and it skidded into a spinning, fluttering dive. Control surfaces flapped spasmodically, in a desperate attempt to halt the crazy plunge towards destruction. The effort was wasted.

Trailing the helpless aircraft like a giant kite at the end of its tractor beam, the life-ship continued its dive seawards. It wasn't until angry grey mountains of water, with spray blowing off their peaks, were rolling past a scant thousand feet below that the invisible life-ship released its tractor beam.

Engines roared back to life then, and the aircraft levelled out and slowly climbed towards the cloud base and sunshine again. A female Human began moving along the plane with a cheerful but altogether untrue account of the mishap, adding that the machine was returning to Gander for a check-up.

"Nice work, Captain," said Everra. The whole incident had been relayed to his master screen. The Flagship was now buried in Arctic ice, and while the low temperature suited him, he had no intention of going out to personally supervise operations in the poisonous mixture of oxygen and nitrogen which the Humans called an atmosphere.

"As you know," the Commander went on, "that courier is carrying messages which, if delivered to his chiefs, would greatly ease the tension now developing between those two nations since the destruction of that orbital rocket. Doubtless the courier will try to reach home on another aircraft. You will temporarily disable that plane also, stopping its power plant, then using your tractor beam to make it lose height rapidly.

"This repetition of procedure is deliberate," the Commander explained. "The courier is bound to suspect an attempt on his life, and will communicate these suspicions home. Obviously, his government will conclude, if another nation is trying to kill one of their subjects—and one bearing diplomatic immunity at that—then that nation is not far from declaring war."

As he cut communication with the life-ship Everra thought of

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the fleet which was now only fifty hours away. Small incidents like this could precipitate a global war, he knew, but could they do it fast enough? There would have to be more such incidents. Some more prodding was indicated.

An attention signal blinked suddenly on his panel just as he was bringing extra levels of his mind to bear on the problem. It was the Ecology Section.

"We have determined the balance between edible flora and fauna necessary to keep the Humans nourished," the Chief Ecologist reported, "particularly such food sources as 'Cattle,' 'Grain' and 'Potatoes,' whose absence or curtailment would lethally affect this balance, and this data has been distributed to the Fleet." He ended, "Atmospheric analysis and tests on specimens we've picked up have shown us the most effective gases to use on these Humans."

Imperceptably, Everra's mind drifted into a highly pleasurable contemplation of what a successful end to this operation could mean. He checked it roughly, grimly reminding himself that success depended, firstly, on his bringing the leading nations of the planet to the verge of war—or at least to a state of full mobilisation for it. Secondly, and more important, it required the detonation of a number of politically well-placed Human 'fuses,' hypnotically primed to function instantaneously all over the planet. These 'fuses' had already been picked out, and needed only the proper conditioning. It was time, he thought as he called up the Elissnian Chief Psychologist, he saw to that.

"We are ready to begin treatment of the first Human ruler," the Elissnian announced, forestalling him. "Do you wish to observe?"

"I do," the Commander said.

It was night. The low, rambling villa was lit only by the reflected sky glow from nearby Peking, and an occasional guard's spotlight playing over the grounds surrounding it. The wall enclosing the summer residence of Mao Hsein-Yan, overlord of all the teeming millions of China and its satellite states, was guarded like a fortress. But this august personage was a mild, studious man who objected to having too many of his drab-uniformed soldiers infesting the place, so the villa itself was relatively empty.

In some ways that made the Elissnian psychologist's job easier. But not much.

The Elissnian dropped like a stone from the hovering scoutship, until its tractor beam abruptly checked his fall and set him gently onto the villa's roof. Carefully, so as not to rattle the instruments

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hung about his horny body, he scuttled across to the open skylight. Using two gripping arms, he anchored himself to the edge until his four sucker-equipped tentacles were properly attached to the room's ceiling, then he crawled quickly across it and down the wall to the floor.

Fortunately his race was a warm-blooded, oxygen-breathing type, though physically very dissimilar to the Humans, so that a face mask was all the protection he required. He could never have managed such gymnastics in a spacesuit.

Not everyone in the villa was asleep, the Elissnian discovered; he could sense a few clerks working in their rooms, and at each end of the corridor which contained Mao's sleeping chamber stood two guards. They differed from those outside only in that they wore soft felt slippers instead of heavy boots. He began pulling himself in until he somewhat resembled a football with bunches of spaghetti growing from it, and using only his suckers, climbed to where the corridor wall joined its ceiling. It was dark up there. In a few seconds he was at the ventilator above Mao's door, and easing himself through it.

Mao Hsein-Yan lay on a wide divan, and the coat of arms embellishing the silken cushions heaped on it made identification doubly sure. Beside the divan was a low table containing a lamp, and an open book with a set of wire-connected lenses lying on it. The psychologist moved the book and spectacles onto the floor in case of accidents, climbed to the table top, and went quickly to work.

First a needle injected the drug which would place the sleeper in the proper state of trance. While that was working its way through his system, two light, paper-thin metal plates were attached to his temples, and connected to the mental amplifier worn by the psychologist. In a few minutes he would implant the required hypnotic commands. The Elissnian hunched closer.

There was a sharp click and a sudden blaze of light. The Elissnian's movement had knocked on the switch of the table lamp. The sleeper woke. He saw the alien horror poised a few inches from his face, and his mouth opened.

Fortunately, the Human had just exhaled, so his cry of terror was little more than a harsh indrawing of breath. The Elissnian shot up the power of his mental amplifier and viciously held the Human's mind so that a repetition of that or any other noise was impossible. Gradually as the drug took hold, the horror faded from the being's face. The Elissnian switched off the table lamp; his eyes did not require it.

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Just below the level of the Human's conscious mind, and with a power and urgency which made them impossible to disobey, the Elissnian psychologist planted his commands. *When you awaken,* he stated with awful certainy, *you will annonce that you will speak to your people over the radio networks, at a time exactly fifty-one hours and seven minutes from now. You will order that those without receiving sets will get to one. At precisely fifty-one hours seven miutes from now, you will tell them that they are threatened by . . .*

There was a knock at the door.

In some corner of his mind the Elissnian must have realised that the noise which the Human had made on awakening must have been noticed, and that his stupid switching on and then off of the

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light had further aroused suspicions. But if he left now he could never finish—Mao Hsein-Yan would be too closely guarded. Grimly he continued ramming data and instructions into that now-defenceless mind. *You will tell them they must not leave the towns and cities, or disperse themselves in any way. After the first wave has hit, you will . . .*

The knock was louder, accompanying an anxiously spoken query.

The psychologist worked on. A whistle shrilled loudly, and he flinched as the door shook to the impact of a heavy shoulder. Whistles were blowing all over the place, and sounds of running feet were approaching the villa when he gathered up his instruments and dropped to the floor. The job was finished.

When the door crashed open he was waiting beside it. Darting through, and between the legs of the still off-balance guards, he made for the room with the skylight, desperately flashing a 'Stand By' call to the hovering scoutship. He was small and fast enough to be mistaken for one of the villa's pets, especially in bad light. But by this time the guards were ready to shoot anything that moved, up to and including their own shadows.

The first bullet tore plaster from the wall beside him. The second smashed through two of his sucker tentacles at the point where they joined the rib cage. Slowly, the Elissnian continued across the ceiling using his remaining suckers, and the adhesiveness of his two feeding orifices to hold him up. It must, the watching Everra thought, have been very, very painful.

Just as the Elissnian was pulling himself over the edge of the skylight, a guard opened up with his machine-gun.

Everra's screen went blank and silent; a bullet had smashed the sound and vision pick-up which the Elissnian had been wearing to relay back his movements.

"*Pull him up!*" the Commander called urgently. But a new picture flashed onto the screen even as he spoke, the villa roof as seen from the rapidly descending scoutship. The skylight enlarged, as did the tattered, almost shredded, bundle beside it. The bundle was motionless until a tractor beam caught it, whipping it up out of sight. A large, wetly shining stain marked the place where it had been.

"We have lost one of ourselves," the scoutship Captain said. The interpreter could not give Everra the emotional content of the words, but he could understand how a telepathic race must feel about death or injury to one of themselves. The officer ended shortly, "Otherwise we are ready."

"Good. Washington, United States sector, next."

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The Commander wanted to say more, but there was no time for sentiment. One thing he did know, the sight of an Elissnian would never disgust him again.

Washington, Paris, Moscow, London—all the capitals would be visited by Elissnian telepaths. And the heads of the smallest countries would also have that mental time-fuse planted in their brains. Not only rulers, but the great statesmen, philosophers and lawgivers would receive the same treatment. In short, every person the people of the world looked up to and trusted would, at a certain instant two days from now, find themselves addressing their largest possible audience, and telling them . . .

The Commander made a small, self-congratulatory noise to himself. That part of his plan should work perfectly. But it would be wasted if he couldn't intensify the present war scare sufficiently for his 'fuses' to have the best results. For the hundredth time he went over in his mind the strategy—that sleight-of-hand on a planetary scale which would, until the right moment arrived, keep the population of a world ignorant of the catastrophe about to overwhelm them, and which should enable Everra to clear the planet of all intelligent life in a matter of hours.

The Humans had to be driven to desperation, to such a state of fear and hysteria that they would accept anything, and do anything, which promised the slightest hope of deliverance. Only one thing could force their minds into that condition of malleability; War. He had to drive them to the point of global war, where civilians and armed forces were both tightly organised and mobilised for defence—and incidently, their considerable array of weapons trained on each other instead of on his Grand Fleet. Then, when they had approached the proper degree of frenzy, despair and sheer nervous tension, only one tiny push in the right direction would be needed for Everra's purpose to be accomplished.

Suddenly the Commander hated the whole business. He felt sickened at the things he would be forced to do to this race. The Su were a highly-intelligent, civilised and sensitive species, and the knowledge that the evil he must do was necessary for the attainment of a much greater good did little to minimise his feelings of self-disgust and guilt.

The Earth operation was not the type of job normally given to a member of the Su race. Occupying all the highest positions in the Galactic Union, they were the ruling class of a civilisation covering several hundred inhabited solar systems, and they were

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extremely long lived. Physically they were cold blooded and vaguely starfish-shaped entities who had evolved on an ammonia-methane type planet, and they slept only for a few hours each year, and then only when an accident made it necessary to re-grow some part of their body. Mentally they had yet to find an equal anywhere in the galaxy.

Though they ruled, it wasn't altogether the hunger for power that drove them. Rather they felt a pressing need to make everything orderly and predictable instead of chaotic and variable, which seemed to be the natural order of things. And though galactic civilisation was at present about the most disorderly thing imaginable, Everra thought that they were succeeding.

But even among the all-powerful Su there were different levels of intelligence and ability. The Crennorlin-Su—to which class Everra belonged—were a group who traditionally got the dirty work, work more suited to the servants than the masters.

On the Commander's control desk lights winked, but they were not of sufficient urgency for his personal attention. He was thinking of the briefing given him by his superior for the Earth mission, and wondering if he would receive an insult or a compliment.

"For the first time a Su is being given this job," his Sector Co-ordinator had told him, "because you have many times shown a remarkable understanding of individual and group problems facing the lower orders. An operation of this nature calls for this ability in addition to the organisational and logistic proficiency required."

Unceasingly, Everra had striven to attain his present position of Governor of the three solar systems which he ruled—and sickly, uncultured and scientifically-backward systems they were, too, though he was bringing them along nicely. Certainly he understood individual problems. But the function of a member of his race was, or should be, greater than that. Everra wanted to be up where the problems dealt with applied to whole civilisations, where Government was a bright, clean adventure in the exciting realms of probability mathematics, not the dirty, sordid and monotonous solving of the same little dilemmas—with microscopic variations—over and over and over again.

Everra wanted the chance to make policy instead of continually carrying it out.

But if he was to have that chance, Everra thought as the number of attention lights on his panel increased sharply, he had better not forget this particular problem.

An observer from the West Europe sector was waiting to report.

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"Due to the severing of diplomatic relations, full mobilsation has been ordered here," the officer stated curtly. "Missile launching stations have been manned and alerted. The civilian defence measures which you predicted are in operation, including preparation of Bomb-shelters built during an older war scare, and tunnels, suitable for conversion to such shelters . . . "

Good! the Commander thought, relieved. If one sector began such preparations, then the others must follow suit out of sheer self-protection. It was only necessary to make sure they did it quickly.

" . . . But," the officer continued, "there are certain individuals —their following, though diminishing, is still large—who are preaching ideas such as the 'Unity of Man,' the utter stupidity of War, and stressing the fact that small differences in skin colouration and idealogy are poor reasons for committing racial suicide. There are Humans like this in every sector, and in most places air their opinions unhindered. These persons are definitely retarding the progress of the operation."

Everra seethed quietly. 'The Unity of Man' indeed! He used words picked up from several Human languages, but gained little relief as they referred to body processes and concepts completely alien to him. Difference in colouration and idealogy . . .

Suddenly the Human histories he had been so hurriedly absorbing came back to him. Those two differences had caused high feeling, and even physical violence, many times in the past. He spoke quickly:

"You have an Elissnian on your ship. Connect him to my interpreter at once."

The Elissni were incapable of full telepathic contact with the Humans—only among themselves was perfect communication possible. But they could receive—and more important, transmit—strong, non-verbal feelings and emotions to any warm-blooded oxygen-breathing race. And a member of such a race who was not himself telpathic would, of course, treat those transmitted feelings as his own, and act on them.

Everra knew that among the associates of these sane and peace-loving people whose activities were threatening his master plan must be some who were capable of silencing them. A subtle undermining of moral integrity could do it, but brute force would do it much faster. Briefly he sympathised with these lone crusaders, but there was too much at stake and too little time to do more than that.

As the Commander relayed these instructions to the Elissnian, the general emotional lethargy displayed by the Humans even in

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the face of approaching war recurred to him. Surely this type of psychological prodding, used in the proper places, could solve that problem, too. Fighting down his sudden self-loathing at this latest tactic, he enlarged on his instructions.

"You will find," he concluded, "that the emotional potential behind such words as 'Nigger,' 'Dirty Red,' and 'Jew-boy' is sufficient, if stimulated correctly, to start a wave of civil intolerance which might accelerate the approaching international breakdown. These feelings of intolerance have been buried for a long time, but——"

"Pardon, Sir," the interpreter cut in, "but the Elissnian says 'No'!"

For a few seconds the Commander couldn't say anything. He wasn't used to that word being addressed to him.

"I will not," the Elissnian said—the interpreter having gone back to straight relaying—"attack or undermine the religious or political idealogy of any intelligent being. This is dirty and shameful work . . ."

He continued in the same vein until the Commander called, "Silence!"

The Elissnian stopped. Everra let the silence drag out for precisely the length of time necessary to allow the other to realise the enormity of what he had done, and was doing. Insubordination. Disobedience to superiors while on operational duty—the fact that it occurred at a critical stage of that operation made the crime even more heinous.

Quietly, the Commander said, "This is a combined operation in the widest possible sense of the word. My plan for conducting it has been outlined to every unit in the Fleet, and has been generally approved."

A chaotic picture of the many and variegated life-forms which made up his command swept into his mind, and the incredible amount of organisational detail necessary to make them a single functioning unit, a team.

"However," Everra continued, "there has been no time to allocate the unpleasant jobs to beings who might suffer least in doing them. They have, instead, been given to those I know can perform them most efficiently.

"I do not think that any Elissnian would risk the success of this operation, or have the lives of millions of entities on his conscience should the success be only partial, merely because of ethical hypersensitivity towards a few individuals."

"My apologies, Sir," the Elissnian relayed a few minutes later. "I will begin at once."

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"Do so," the Commander said, and settled back. Had he possessed the facial equipment for it he would have sighed with relief.

The Elissni were a peculiar race in some respects. Their telepathy was a curse as well as a blessing; suffering in others affected them almost as strongly as if it had occurred to one of themselves. They were, Everra knew, the Galaxy's most sensitive, moral and sympathetic life-forms, and because of that sensitivity, they were also its greatest crowds. But occasionally, when the incentive was great enough, they could forget what cowards they were.

Again he saw the riddled body of the Elissnian psychologist lying on the roof of that villa near Peking. No matter how this turned out, there would be no disciplinary action against any of them.

But that resolution did nothing to ease his own conscience. He felt anything but proud of some of the things he was doing on this unfortunate planet.

The progress reports were still satisfactory.

An Elissnian-manned scoutship, and life-ships from his own vessel containing Elissnian psychologists, were rapidly processing his Human time-fuses. All national leaders had been treated and they were now working on the relatively less important types—persons who, while not rulers, still commanded a large following for various reasons. The Elissnian lists were long, but the less important—and well-guarded—a person was, the more easily were the hypnotic commands planted in their minds. It was estimated that ninety-one percent of the planet's civilised population—people in backward areas such as Greenland, central America, and Africa were excluded, of course—would hear the message to be broadcast simultaneously, everywhere, thirty-nine hours from now.

Thirty-nine hours, Everra thought. Progress was more than satisfactory. But that report had posed another problem: the unorganised and decentralised near-savages of Africa, parts of America and the Pacific islands. He wanted to make a clean sweep of the planet, if possible.

The Commander let the problem sink to a lower, almost subconscious level of his mind—where the unique, multi-layer brain possessed by the Su race began breaking it down into large numbers of smaller, and solvable, problems—and considered the other reports coming in.

There were anti-Semetic riots in Paris and Berlin; stonings of several embassy buildings; violence against persons whose skin

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pigmentation or religious ideals disagreed with the geographical norm. There were increasingly frequent accusations of intolerance and violations against Human Rights being hurled at each other by the leading nations of the planet. Another more than satisfactory report, the Commander thought. He wondered if the situation he wanted wasn't developing too fast.

Before signing off the scoutship officer added that the noted Human broadcaster and critic at large, Hammond R. Bradley, had been found guilty of treasonable activities against his country, and incarcerated. The Human's last broadcast had contained words to the effect that some crazy agency wanted to destroy the Earth, and he refused to believe his fellow men responsible for this madness . . .

Everra's limbs curled tightly inwards. His couch creaked with the sudden increase of pressure, but he didn't hear it. *How many people had heard those words?*

. . . But the Elissnian in charge of Bradley at the time had quickly impressed on the minds of the Humans around him—and which later resulted in its wide-spread publication—the idea that the commentator was not sane.

Everra relaxed again, but not completely. Someone might not believe in Bradley's insanity.

There were more uncertainties in this operation than he had planned for; many more. Everra could feel his limbs and body tightening up—his anxiety had become so intense it was manifesting itself even on the physical level—and back in the dark and silent corners of his mind there was growing a nightmare. It was the ghastly picture of the carnage that would all too certainly occur if those certainties favoured the Humans, and he was unknowingly leading his fleet into an ambush.

There was, he reminded himself, the matter of the orbiting rocket. It *could* have relayed information of his presence to its ground control, and possibly even a picture of his ship, before he had destroyed it. Or the whole area might have been under telescopic observation.

And there was the Peking incident. Suppose someone found and analysed the blood from the Elissnian psychologist's body. A sufficiently imaginative mind could draw some dangerous conclusions if both incidents were linked together . . .

Everra's screen lit up. An officer said crisply, "West Europe sector reports intensification of civilian defence measures, with frequent Bomb-drill compulsory in all large cities, and estimates

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their shelter arrangements adequate for roughly two-thirds of the population." The officer paused, his expression suggesting that he expected some show of surprise at this amazingly high percentage. When it wasn't forthcoming, he went on, "The only new development is that in certain cities—they are very few—the citizens have refused to take part in these protective exercises, apparently on ethical grounds.

"This situation isn't widespread," he ended, "but it may require some Elissnian mental work to control it."

A new development, Everra thought wearily. Another demonstration of Human perspicacity. *Or was it?*

Suppose these stubborn and seemingly rebellious citizens really knew more than the others, knew that there wouldn't be a war of the type expected, and had been secretly instructed not to use their Bomb-shelter because counter-measures were being prepared in them against the true aggressor, an unearthly enemy of unknown power.

The gory spectre of death and destruction hiding in Everra's mind began to edge out of the shadows.

Why, the Commander realised suddenly, that commentator Bradley could have been imprisoned, not for his pacifist activities, but because he had unthinkingly given away the knowledge which the higher military authorities of Earth were keeping hidden until they could spring their surprise—whatever hellish weapon that might be—on the fleet which they guessed must be coming.

Everra pictured his Grand Fleet ripped apart, by some weapon which in his hurry he had overlooked, with unpowered wrecks falling incandescent through Earth's atmosphere, or snuffing themselves out like moths as they drifted helplessly into the Sun. And the bloody massacre of the Fleet's surviving personnel. Worse than his own death was the shame to the whole Crennorlin group. The spectre of horror rushed from the shadows and stood plainly revealed. The sight sent a slow, writhing movement along Everra's massive body and limbs.

A simple explanation might be that some of the Humans were all-range telepaths. Such mutations had occurred among non-telepathic races before.

EVERRA was falling into a trap!

Desperately, viciously, the Commander fought to regain control of his mind and body. He was being stupid. He was frightening himself for nothing. Those suppositions were impossible. The Elissni were spread thinly over the planet, but surely they would have detected telepathic Humans, or double-thinking on such a large scale.

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The slow undulations in his muscle sheath died as his fear subsided. Everra was very glad that he was alone in the control room where there were no one to witness his shame. Soon he was thinking clearly and analytically again. The spectre was gone—into temporary hiding, at least.

During his instructions to the Elissnian Captain he thought fleetingly of how easy it would be to grab up a few low I.Q. natives from some out-of-the-way spot—to prove he had actually been here—and then take the Fleet back with a story that the Humans had a secret weapon which was too much for them. Nobody would challenge the statements and deductions of a Su, especially when there would be no possibility of returning to check up on them.

The thought recurred as he was energising the transmitters which allowed faster-than-light communication with the approaching fleet, but he drove it from his mind. He had a duty to perform on Earth.

At present the Grand Fleet was coming in high above the plane of the ecliptic—so as to avoid the asteroid belt—at a position slightly within the orbit of Jupiter, and decellerating furiously to kill the tremendous velocity it had built up. Scattered over several billion cubic miles of space, it possessed about as much formation as a cloud of gas. But that would be remedied when the Fleet had braked sufficiently. At the speed they were moving it was better to have some elbow room.

Even when making the jump through hyperspace, ships tended to move with respect to each other, which was the reason Everra hadn't been able to simply take his whole fleet close in to Earth before emerging into normal space. Had it occurred, that materialisation of over three thousand ships out of hyperspace—and into each other—would have resulted in an explosion of stellar proportions, and all life on Earth would have perished there and then.

There was no easy way of manoeuvring such a fleet, otherwise a Su would not have had to take the job. Everra settled himself to absorb the reports which were streaming in, giving to each a very small part of his tremendous and complex mind, and building in it a complete and incredibly accurate picture of the movements and potentialities of over three thousand ships.

Admirals, Marshals, Commodores, and hundreds of other ranks peculiar to individual races—some of which could barely grasp the concept of discipline, or action in concert—reported in. Reports on such wildly varied items as Drive efficiency, morale, bedding, food supplies, and other minutiæ important only when considered

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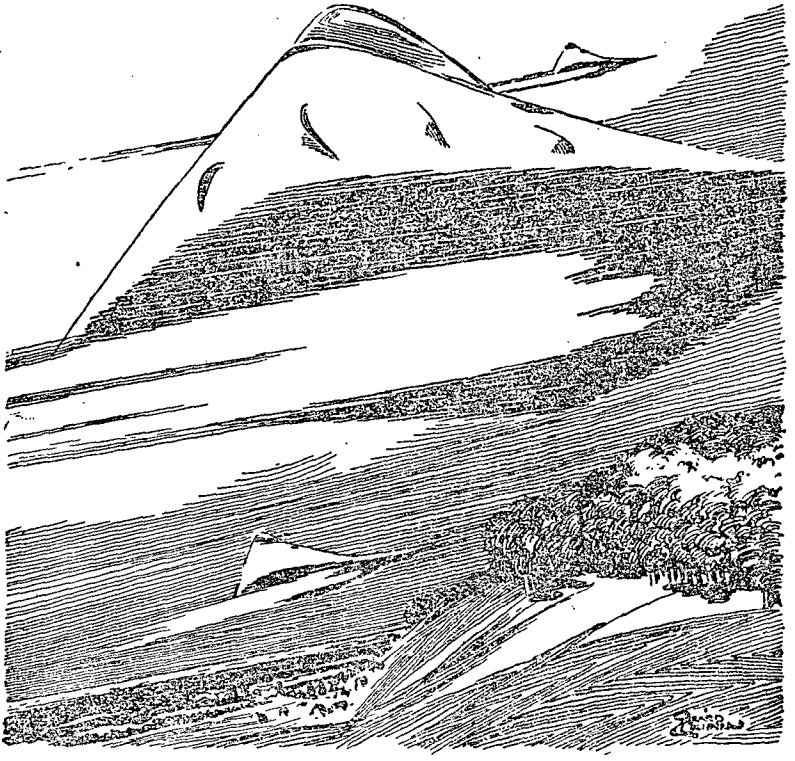

as a whole. Occasionally Earthside reports interspersed those from the Fleet, telling of satisfactory progress. To Everra the passage of time seemed to speed up as the Grand Fleet—now pulling itself into a semblance of formation—slowed towards its objective.

He was listening to a commissary report from a Rheslian transport Captain when, without warning, the screen blanked out. It stayed blank until Everra, more puzzled than angry, asked harshly to be connected to the Commodore of the flotilla containing the ship he had been speaking to.

The Commodore of Flotilla 5, Sub-fleet 87, was a Rheslian whose bony exo-skeleton made his emotions unreadable. But he knew what was required without being asked, and had a picture of the

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disaster relayed onto the Commander's screen even before he began making excuses for it. Everra didn't care much how it had happened, the sight of it was enough.

The supposedly parallel courses of two Rheslian transports—great unwieldy brutes of ships—had gradually intersected, their lack of manoeuvrability and tremendous velocity making it impossible for their crews to act fast enough to avoid collision. When the two ships had met, their inertia—the product of several hundred thousand tons of ship moving at thousands of miles per second—had fused and partially vaporised them. There was now a small Sun rushing ahead of the still-decelerating Fleet.

Rheslia, thought Everra sadly; a small world, poor in metals and sparse in population. Those two transports were a sizeable fraction of their system's naval power, and the personnel loss had been one hundred percent in each. It was at times like this, the Commander thought rebelliously, that he began to doubt the worth of such expeditions as this.

But mostly he thought of that incandescent mass hurtling ahead of his Grand Fleet. With a flare like that lighting their supposedly secret approach, he might just as well start broadcasting his purpose to the Humans of Earth right away, and forget his devious strategy. But he pictured the confusion, panic and bloody chaos that would occur if he was to use the simple, straightforward method of carrying out his mission. Anything would be better than that. Maybe his original plan could be used even yet.

Quickly he asked the Rheslian Commodore for the course and velocity data of the fused wreckage, then dismissed him. Before the glow had died from his view-screen, Everra's mind was approaching a solution to the problem.

The Fleet had crossed the Solar System and was currently passing the Sun within the orbit of Mercury, thus hiding the flare from its Drive units by approaching Earth from out of the sun. Its acceleration—and subsequent deceleration—had been the highest that its overworked gravity compensators would allow. Lacking guidance, the wreckage of the two ships would move away from the all-concealing Solar glare, and arrive in the vicinity of Earth ahead of the Fleet.

The Commander did some mental calculations—which could have been done by the ship's computor, though not nearly as quickly—then pressed a call-stud on his panel. It wasn't nearly as bad as he had at first thought.

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When his interpreter, and shortly afterwards an Elissnian, answered, the Commander told him of the disaster and of the problem it had posed. In approximately eleven hours the wreckage —cooler then, and considerably dimmer—would pass near Earth. It would be brightest for a few minutes before sunset in the Western hemisphere, when it would outshine Venus, and then recede quickly beyond naked-eye observation. Most Humans including astronomers, would dismiss it as a wandering comet. But if some observatory with proper equipment made a spectro-analysis of it, the radio-active and organic components of the wreckage would show, giving a strong indication of its true nature. The Elissnian must therefore take steps to see that bad viewing conditions obtained over the larger observatories.

If direct weather control was impracticable for any reason, the Commander added, hypnosis or sabotage must be used towards the same end.

As he pressed the cut-off stud, Everra was wryly thankful that direct communication was impossible with the Elissni. That race was being severely overworked on this operation; even through the interpreter the Elissnian had sounded annoyed.

To the Commander, time passed at a steadily accelerating rate. He marshalled his fleet into what he hoped was the most effective formations, and reports from Earthside scoutcraft continued to pour in. The artificial comet, funeral pyre of two full crews of Rheslians, passed. The Humans who saw it were inclined to regard it as an omen foretelling the doom to come, rather than bring any degree of detached, scientific curiosity to bear on it—a possibility which the Commander had not foreseen, but which eased his mind considerably.

But there was always doubt. Right up to the end there would be doubt. Someone might have seen that wreckage and analysed its radiations. The spectral lines of elements not found in ordinary cometary bodies would have shown up: strange metals, highly-unnatural radio-actives, and most of all, the tell-tale traces of Carbon which could only mean the recent presence of organic life.

There was the destruction of the orbital rocket, and the other unavoidable slips which had been made. It wasn't probable, Everra knew, but it was *possible* that a secret power group on Earth knew, or thought it knew, practically everything, and was keeping this knowledge from the public so as not to arouse his suspicions. They might even allow their people to believe in the approach of a global war to further lull those suspicions, only informing them

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of the truth at the last moment when it would be too late for the Commander to alter his strategy.

Such a ruse, though unlikely, was possible. The Commander's present plan depended on a very similar one.

Grimly he fought back a repetition of his earlier fear, paralysis. It was time that he issued final instructions to his Fleet. It had now left the orbit of Venus behind and was thirteen hours and seven minutes from Earth. The Commander plunged into that ocean of detail, fiercely trying to convince himself that everything was going as *he* had planned it.

To the Pacific sector he assigned two whole Sub-fleets—light, fast ships cable of dealing with the widely-scattered population of those unarmed islands. To China—despite his psychological priming of its ruler, Mao Hsein-Yan—he directed three. Population density was high there, and many would be unable to act on those broadcast instructions. Other sectors of Asia required similar action. Everra ordered the necessary units to see that it was carried out.

During a brief lull his Earthside screen lit up and an officer made an abbreviated salute. "War tension is increasing as predicted," he said rapidly, "with the smaller 'nations' allying themselves with one or other of the major powers. Attemps at reconciliation have ceased." The screen blanked out.

Suddenly and for no apparent reason, that section of Everra's mind which he had so carefully trained to think and react as would a Human's of Earth, looked out at the state of the planet. *What a hell,* it thought sickly, *for a civilised race to be in.*

Hastily the Commander brought his attention back to the approaching Fleet. They were now seven hours away.

Africa, South America and areas like Greenland and Iceland would require special treatment. In under-developed and sparsely-populated sectors civilian defence organisations would be nil. Offensive weapons should be negligible also—which, the Commander thought feelingly, was a very good thing. Carefully husbanding his resources—the Fleet, while large, was not unlimited—he continued to assign Sub-fleets, Squadrons, and often single units, to the sectors which he thought needed them.

Some of the Humans were bound to escape his net, Everra knew, but he wanted to make the number to do so as low as possible.

His screen brightened. A voice rattled, "The situation is deteriorating rapidly. Sealed orders have gone to Humans in charge of several missile launching stations, alerting them for instant use, and psychologically, the personnel manning them have become very unstable. No official orders have been given to open

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hostilities anywhere as yet, but more and more of the Humans are reaching the point where war, or some other release, will be necessary purely for the relief of tension."

That's more like it, the Commander thought, his uneasiness fading. That couldn't be pretence out there; one could almost feel the hate building up. He had merely the logistics of a planetary seizure to worry him now.

Four hours to go.

Small nations and cities who remained determinedly neutral were another problem, one needing many individual solutions. But there was so little time left.

It would be dangerous, the Commander realised, very dangerous, but the only answer was to bring in a section of the Fleet ahead of time, to deal surreptitiously with areas not closely in touch with the more advanced nations.

Central Africa, for instance.

Quickly choosing crews who could take acceleration pressure far above the norm, he ordered their Captains to cut deceleration so as to arrive an hour before the rest of the Fleet. If he couldn't manage everything at once, then he must risk spreading the time out a little.

He had barely finished that when another report came in. A party of Human scientists investigating cosmic radiation above the North Magnetic Pole had reported fluctuations in the brightness of the Sun, and numerous points of light shining to one side of it. Unknowingly, they had spotted his Grand Fleet. He sent one of his remaining life-ships to deal with them. Nobody, he hoped, would have time to examine their report too closely during the present emergency.

One hour and seventeen minutes. The advance section of the Fleet was less than half an hour away.

Suddenly the whole panel blazed with attention signals, and the picture of a long, silvery torpedo trailing flame and climbing rapidly, flashed onto his screen. A voice recited its point of origin and course, and suggested a method for dealing with it. Eevrra hurriedly signalled approval, and watched as the missile wobbled off course and dived into the sea without exploding.

No, he chided the unknown Human whose jitters were responsible for launching the first atomic missile, *you mustn't go off half-cocked like that.*

For the best results, the dammed-up tensions of fear and black desperation had to approach bursting point everywhere simultaneously. Only then could Eevrra channel it into the direction he wished it to go.

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Suicides, murders and rioting had increased sharply, his scout reported; and individual and group excesses of a kind which Everra did not care to think about—he was, after all, a highly civilised being. It was the picture of a society on the rack, being stretched to its elastic limit. The Commander thought briefly of the chronometers used in his ship. They could be wound, and the tension on the spring would gradually dissipate itself along the gearing of the mechanism as it did its work. But wind it too tightly and all the stored power was delivered with a single explosive *snap* as the spring broke.

Earth was wound up far beyond the limits of safety for any culture. Everra continued to wind.

Fifty minutes. The advance guard of his Fleet was due.

The village of Kwali Seywa was important to nobody and even the local chieftain rarely visited the place. Only doctors were mad enough to do that. A thin whistling noise made the few villagers in sight look up.

High in the sky a cluster of black dots were increasing rapidly in size. The natives watched them until they couldn't believe they could grow any bigger, then flame and thunder erupted from the undersides and they realised with a shock that the objects were still many miles up. Paralysed with terror, they saw the things grow until they darkened the sky, and saw swarms of smaller objects burst from them and scatter. One of the big ones landed about three miles to the west. It towered like a black metal mountain above the jungle.

Even before one of the alien small ships—with its all too revealing transparent nose section—shot across the village and circled abruptly back, the natives were running for shelter. But their panic was of little avail as the alien ship had begun to spray a heavy yellow fog over an ever-widening area, which quickly engulfed them in its rolling tide.

Armed with detectors from which nothing that lived could hide, and virtually unlimited supplies of the gas, the life-ships from Everra's advance squadron sectioned off the area and cleared it. Everything that moved was touched briefly by the gas, whereupon the living creatures stopped moving. The new metal mountains spewed out streams of land vehicles which spread out in the wake of the far-flying life-ships, quickly and efficiently dealing with the life-forms lying flaccidly about.

Goats, Humans, cows and a few mangy dogs received precisely the same treatment. Time was too short for distinctions.

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From the Flagship, Everra signalled approval of the handling of the operation, and broke contact. Similar events, he knew, were taking place in the Amazon Basin, Bataan and other areas where communications were bad and the level of technology low. He also knew that some of the landings had been seen. But there was an epidemic of object-sightings due to the war which was boiling up, and it would take some time to check them all.

The main Fleet would arrive in twenty-six minutes.

From the Urals this time, another atomic missile streaked skywards and made a long curve down—another Human gunner had reached breaking point. The Commander watched without comment as a life-ship shot after it, and the missile, de-activated, crashed to earth.

But generally, the tension building explosively upwards in billions of Human nervous systems had reached a level just below breaking point, and held there. The reason for this was that they were waiting. Black, white, brown, yellow and red, the people were waiting to hear the voices of their rulers and counsellors.

And of them, Everra would have complete mental control.

The Humans were balanced on a knife edge. They were strung up as tight as they could go. Sick with fear for themselves and their loved ones, their critical faculties almost gone, it required just one tiny push in the right direction to make them do what Everra wanted.

In eight minutes, the push would come.

Everra sweated. The temperature of his massive, sprawling body remained at its customary minus 112 degrees Fahrenheit, but similar physical changes due to extreme worry took place; so Everra sweated. The whole operation, his future, everything, depended on this working right. He hoped desperately that the Elissnian hypnotists had done their work well: they, and their unusual mental abilities, were his chief reason for this unprecedented departure from normal strategy. That, and the current state of armed peace on Earth, had given him the original idea.

Five minutes.

In Alaska, a Second Pilot stood by the frost-smeared window of the briefing hut, looking with frightened disbelief at the long blank shadow of his ship, and at the bulge made at its underbelly by the Hell-bomb, waiting and listening. In Afghanistan, a radio set was surrounded by fiercely bearded, gesticulating hill people, most of whom still regarded the device as a work of magic. But the owner of the house was a wise one, and would explain the difficult words which their leader sometimes used. They also waited.

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Three minutes.

Under mountains and plains, in Man-made caverns echoing to the metallic sounds of lethal torpedoes being run into position, other men waited. Their eyes were on radar screens, their fingers on firing studs and their ears cocked towards the extension loud-speakers nearby. All over the planet their thoughts were much the same.

Their King—or President, or Dictator as the case might be—would begin by saying that they did not want to fight. That no person in their country from their ruler down to the poorest beggar wanted to fight. But a terrible war was being forced on them by the insane actions of their enemies, and there was no choice but to defend their country. The end result of these words that all their rulers were saying about each other would, the people knew, be planetary destruction.

And neither the Bomb-shelters, the civil defence drills nor anything else would save them.

But why, *why*, they asked themselves helplessly, had everyone gone mad like this? And all within a few days.

Two minutes.

Announcers in radio stations all over the planet cleared their throats, nervously aware of the power and authority of the individuals waiting to speak beside them, then began, simultaneously, their hundreds of introductory announcements.

One minute.

Everra's Flagship burst from its icy covering and shot southwards. His carefully prepared Human time-fuzes, designed to shock the population of a world into simultaneous, concerted action were about to function, and the spearhead of his Fleet was already screaming into Earth's atmosphere.

Now!

A myriad mouths whose lightest word was law opened to address their people. But the messages appealing to loyalty and exhorting them to defend their rights were not delivered. Instead, reflected in strained faces and tormented eyes, a bitter mental struggle raged as hundreds of the world's most powerful men tried to fight back the words which forced themselves from their lips. In his speeding ship Everra listened, already tasting the joy of success.

Suddenly the lines of strain melted from the faces of the mighty. Their eyes still reflected pain, and shock, but now it was from the complete and accurate understanding of what was about to happen to their planet. They continued speaking, with renewed urgency.

The wave of relief that rose from the listening billions of Earth

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was almost tangible. There would be no war, their leaders assured them. Something inconceivably worse threatened their planet. But there was help coming, in the form of a great Fleet from space . . .

The Commander stopped listening. All at once he had thousands of things to do.

Two days had passed, and the number of Humans waiting to be moved from Earth was less than a million, all of them in the city below. Protected by a fifty-mile circle of utter blackness—the maximum area which the Flagship's refraction screen could cope with—they enjoyed the relative coolness of ninety-seven degrees Fahrenheit.

To the limit of visibility around Everra's ship, the land burned. The sky was a white glare of superheated steam, caused by the boiling top-surface of the seas, and though the scalding, all-enveloping fog hid the Sun, he was fearfully aware of its presence—twice as large as life and ten times hotter.

Fortunately, Earth's atmosphere had made a good insulator. Two hours after the first blast of heat from a suddenly unstable Sun had swept the planet, parts of it were still liveable—provided, of course, that one was far enough underground, or had the protection of a refraction screen.

When the leaders of Earth had relayed the information—which had been hypnotically impressed on their minds by the Elissnians—about the imminent instability of their Sun, and the nature of the rescue fleet coming to remove them to another planet, very little resentment had been shown at the rather drastic methods Everra had used to ready the Humans for quick evacuation. Instead, they used the civil defence organisation and training which Everra's war scare had forced into being to save themselves, which was exactly what the Commander had planned and hoped for.

Assisted by light units of the Grand Fleet, which also sought out isolated groups who had no means of knowing the true situation, great masses of people were assembled and taken off the doomed planet by the giant transports which made up the bulk of that same fleet. Meanwhile mines, Bomb-shelters and the great underground arsenals were readied for those who could not be taken away before the Sun rendered the surface of the planet unliveable.

It had been the civil defence measures which had made the operation such a complete success. While the backward races were being dealt with—usually by gassing into unconsciousness and

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loading aboard the nearest available transport—their more advanced brothers were preparing, with a minimum of panic and confusion, to leave their world forever. And when, forty-six hours after they had been told of it, their Sun blasted out a sphere of radiation that roasted and partly boiled the surface of Earth, eighty percent of the world's population—including most of its food animals—had already gone. The rest waited their turn underground, or beneath the protecting screens of heavy units of the Fleet.

Below his ship, the last great transport, packed tight with Humanity, lifted through the Flagship's screen and streaked for space. Everra withdrew his refraction screen, seeing the unprotected city explode into a sea of fire, and followed it quickly. It was decidedly unsafe to hang about here. He thought, again, of what normal evacuation procedure would have meant to this planet.

With time short, and the population too big to convince otherwise, the Humans would have fought him to the last in the belief that they were being invaded. They would have fought until their Sun cremated them where they stood. And with luck, Everra might have been able to rescue as many as seven or eight percent.

Instead, three per cent had been *lost. Three per cent*—when accepted losses on a Nova-ed world was ninety percent. The honour to the Crennorlin-Su would be great, and his own personal advancement considerable. Yet his joy could not make him entirely forget some of the things he had to do to achieve success. The Su were a sensitive race, especially about causing suffering to their intellectual inferiors.

This situation had occurred before, Everra thought tiredly, and it would happen again. So long as there were warp-driven ships whose path through hyperspace accidently intersected points in the normal continuum occupied by suns, disrupting their energy balance and causing them to Nova shortly afterwards. And should the Sun concerned have inhabited planets, then every system of the Galactic Civilisation which could reach it in time would send ships to evacuate the inhabitants . . .

An alarm clattered loudly, startling him. Briefly, through his heavily-filtered viewscreen, he saw the doomed Sun brighten and swell hideously, engulfing the inner planets as he watched. None too soon, the Flagship slid into the safety of hyperspace.

Presently Everra began working on suitable messages for the friends of the Elissni who had died while planting knowledge in the brains of the Earth leaders, and of the crews of those two Rheslian transports.

James White.

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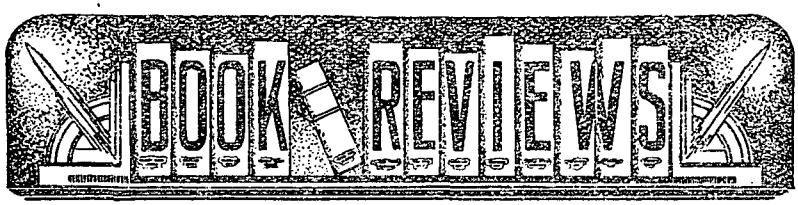

Prior to the last World War, the term " science-fiction " was confined to the few specialist magazines then in existence, which were mostly American. Any novel published in respectable hard-covers, and which was recognizable as science fantasy, bore the label " scientific romance " or " imaginative fantasy," and following Verne, Wells and Haggard there was quite a spate of them in the early 1900's, which gradually dwindled during the twenties and thirties. Most of them enjoyed great popularity among the general reading public, and many a science fiction fan of somewhat mature years will remember these books with nostalgia, or lovingly treasure them in hoarded collections. Such a book was published by Jarrolds as late as 1939, from the pen of an erudite author named Alfred Gordon Bennett. This fairly distinguished literary figure conceived the fantastic idea of a race of giant ants seeking to dominate the world from their subterranean city in South Africa, and indeed, by the use of spaceships, to colonise and subjugate the nearer planets. The title of the book was **The Demigods** and now a new edition is available (stocks of the original were destroyed on the outbreak of war) from Rich & Cowan, price 12/6d, handsomely produced including illustrated endpapers. Its classic style, near pedantic and purple-passaged, with dialogue of the kind which graced Victorian drawing-room plays, and a standard of behaviour from stock characters at times ludicrous—all serve to date the story, although the fantastic element stands the test of time well. It takes a long first half to get into its stride, but after the heroine is captured by the giant insects, and her father and her lover, in separate ways, descend into the underground city to rescue her, the story gets readable and exciting. The physical sufferings which the young couple undergo are well in the tradition of the old-time adventure

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yarn, and their weird experiences before and after they eventually defeat the "Master" (a living brain which guides the giant ants' activities) are strongly depicted, with scenes reminiscent of Fowler Wright's *The World Below*. Hardly worthy of the "classic" description claimed by the publishers, it is nevertheless worthwhile trying, particularly if you are occasionally palled by the sameness of much of the modern slickly-written science fiction which has turned its back on the unsubtle, implausible, but wholesome and exciting, stuff with which, let's face it, the whole thing started. I should be very interested to know the reaction to it from the new generation of fantasy readers.

Densil Neve Barr's **The Man With Only One Head** (Rich & Cowan 9/6d) is an original and, like its title, most unusual novel. According to one of the characters, a newspaper chief, "a two-headed man is news, but if the rest of the world is two-headed, then a one-headed man is news." In this instance it is Vince Adams, millionaire's son, who builds himself an atomic bomb-proof hideout in Arizona. But the catastrophe he lives through unscathed is not a war but the Fog, a vast belt of black dust-cloud which, emanating from an atomic experiment in the Pacific, engulfs the whole world in ten days. When the darkness abates, a recovering civilization finds that all the male species have been rendered impotent—with the exception of Adams. Conveniently, of course, it is also found that all life born after the Fog is normal, so that humanity's problem is not eventual disappearance, but of maintaining civilization for the gap of twenty years or so until the new generation matures. The food problem, at first acute, is relieved by the fact that insect, and therefore plant, life has a shorter span, and that animal, and therefore human, life could be sustained. No, it is the moral and political aspects which receive the attention of the author and provide the entertainment in this interesting book. A World Federation of Nations insidiously usurps power, and amongst other things a code of sexual behaviour is proclaimed. Apparently safe promiscuity will lead to the downfall of civilization as we know it so the Edict was issued—extra-marital relationships forbidden under penalty of death. Vince Adams, in protective custody pending disposal of his unique potency, runs foul of this Edict when a woman gives birth to a child in circumstances which point to his responsibility. Can the last Man suffer the legal penalty? Was he in fact the father? It will probably be worth your while to read this book to find out.

Supreme amongst the welter of juvenile science fiction on the market is William F. Temple's **Martin Magnus On Venus** (Frederick Muller, 7/6d) with the accent on science dispensed in mild but authentic

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(according to which popular theory you subscribe) manner ostensibly for the more youthful reader. This is a sequel to the popular *Planet Rover* and once again that ebullient character, Martin Magnus, is in fine form, first exploring yet another mystery on our Moon where traces are found of an early Titan race (red herring) and then carrying the battle against the inimical Venusians to their home planet. Mr. Temple is in the comforting position of the explorer-storyteller who, having made sure that none of his listeners has visited a certain place, can proceed with confidence to regale them with unrestrained fancies. Hence the present story involves jelly-fishlike Venusians and their elfin Mek underlings ; however, the denouement explaining the Lunar giants, and Magnus' method of defeating the enemy, is ingenious enough, and the whole a fresh naivete which makes for pleasant reading.

A new anthology edited by Judith Merril is always an important event. Not for her the stereotyped 'best' from the current crop of magazines, but a flair for the unusual which unerringly selects those off-trail stories which blend together into a single volume of absorbing interest. Her predilection for psience-fiction is emphasised in **Beyond The Barriers Of Space And Time** (Sidgwick & Jackson, 10/6d) and all nineteen stories are concerned in one way or another with supra-normal aspects of the mind. With a talented cast of authors, the competition is stiff, and with literary standard consistently high, choice of favourite stories is simply a matter of personal taste. My preference for only seven of the stories will be challenged by each individual reader, such is the quality of this fascinating anthology. To go out on a limb, then, I liked " Crazy Joey " by Mark Clifton and Alex Apostolides for a most human treatment of the concealment problems of a young telepath, and Theodore Cogswell's " The Wall Around the World " a psychokinesis story with fine atmosphere. Ray Bradbury's " The Veldt " is the last horrific word on spoiling children, and Bill Brown gives a subtle twist to the ancient Indian rain-making legend in " Medicine Dancer." I enjoyed the light relief provided by Anthony Boucher's " The Ghost of Me," John Collier's " Interpretation of a Dream " and John Wyndham's " Perforce to Dream." However the sentiment of Walter Miller's " Wolf Pack " seemed rather forced, and Robert Sheckley's " Operating Instructions " an uneasy mixture of psi powers and space flight. There were moments of interest in Philip Dick's " The Golden Man " and Will Thompson's SatEvePost yarn " No One Believed Me," and Agatha Christie and Roda Broughton contribute formal weird pieces. Others present include Peter Phillips (with a neat twist ending), J. C. Furnas, David Grinnell, J. J. Coupling and Katherine MacLean, whilst Theodore Sturgeon enhances the book with a fine introduction.

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Probably the best value of the science fiction market today are the two new Nova Novels, which offer full length reprints of hard-cover American novels, stories hitherto unavailable in this country in complete versions. However, no matter how cheap and attractive a pocket book may be it is the contents that matter, and in this respect the quality here is superior to many of the more expensive volumes. I suspect that when these two books were originally published, their themes and styles were too advanced for the British publishers then still feeling their way cautiously in an undeveloped market. Theodore Sturgeon's **The Dreaming Jewels** (Nova Publications, 2/-) is well to the front of my own list of favourite science fiction stories, and its highly original theme of sentient crystals, alien jewels from outer space whose dream creations are duplications of living creatures, is handled adroitly against a fascinating carnival background by a talented author who has since become one of the major writers in the genre. The story of Horty Bluett, one of these quasi-human creations, is shocking and memorable, and no brief synopsis or groping comment can adequately express the strange fascination of this clever, boldly imaginative, yet tender fantasy. An essential inclusion for any basic science fiction library.

On a different level James Blish's **Jack Of Eagles** (Nova Publications, 2/-) has established itself as one of the major works of ' psience-fiction,' and has few equals for its clever combination of dramatic action and convincing details of the wild talents of parapsychology.

Chad Oliver's **Shadows In The Sun** (Max Reinhardt, 9/6d) is one of those rare experiences—a satisfying mature and thought-stimulating science fiction novel, extremely well-written as befits the high standard of one of the more promising of America's newer young authors in the genre. Restrained, but never dull, the plot embodies a fascinating concept—that Earth is a primitive planet suitable for colonisation by an over-populated galactic federation which is both human and humane. Since the galactic-wide incidence of Earth-type planets gave rise to the life-cycle which culminated in dominant Man, so the colonists need Earth-type planets for their new homes. Unfortunately they are all inhabited, of course, like Earth. The enlightened colonising method is to infiltrate cleverly, taking over small-town communities by expert manipulation so that the population makes a natural, gradual exodus (ironically to the great cities, which the outsiders look upon as native reservations) leaving the wholesome countryside to the peaceful invaders. By training they merge into the life on Earth—a natural camouflage which takes a field-anthropologist, one Paul Ellery, to penetrate when his study of a typical small American town, Jefferson Springs, reveals its subtle wrongness. The immense problem of the

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impact of savage meeting civilization, here depicted on a highly imaginative extension of previous historical collisions, is wisely left unsolved, but Mr. Oliver goes far enough to indicate a thoughtful attention to its possible solution, and to provide an entertaining story which is rather better than most.

Robert Sheckley is another new and talented young American author whose disdain for the accepted formulae of science-fiction, already none too rigid, has produced a cornucopia of sometimes delightfully zany, sometimes chillingly horrific, and at all times refreshingly different short stories. A representative selection of his better work is now collected in **Untouched By Human Hands** (Michael Joseph 12/6d) containing thirteen completely unclassifiable flights of unfettered imagination. Sheckley will take an item like hire-purchase and carry its possibilities to a relentless conclusion (" Cost of Living."), or muse upon the problem of a contractor who constructs galaxies with an occasional flaw in workmanship (" The Impacted Man "). A slight misconception of alien ideas of food-caching results in the title story, whilst " Seventh Victim " entails a society wherein legalised murder rechannels man's violence from old-fashioned war. In "Hands Off" the difficulties of hi-jacking an alien spaceship becomes evident, and in " The Monsters " the shocking incompatibility of human-alien behaviour is interestingly described. Perhaps you begin to get the

Continued on Page 128

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idea? Risking an old cliché, you just haven't lived until you have read Sheckley.

Finally a large collection of stories—twenty in all covering 400 pages—edited by Milton Lesser under the title of **Looking Forward** (Cassell, 15/-). The publishers are doing a fine service by making these bumper anthologies available over here at reasonable prices, but unfortunately this, their third volume, varies considerably in quality. In the first section, "Today and Yesterday," there is very little of value, the efforts of Jack Williamson, Lewis Padgett, Edmond Hamilton, Chad Oliver, Walter Miller and Robert Lowndes are representatively inferior, but Murray Leinster finishes up with a neat little piece about an extra-terrestrial visitor in the 15th century, called "The Power." Section two, "The Day After Tomorrow," contains better science fiction including Mack Reynolds' "The Man in the Moon," the straight science of Raymond F. Jones' "Production Test," Isaac Asimov's amusing "Victory Unintentional," and the disturbing "Lion's Mouth" of Stephen Marlowe in which alien invaders use an indoctrinated generation of Earth children as their liaison agents. Don Wilcox has a good idea in "The Voyage That Lasted Six Hundred Years" but not the ability to do it justice, while Ray Bradbury rather overdoes his symbolism in "In This Sign" although his prose reads as beautifully as ever. The final heading, "Imagination Unlimited" leads off with a gem from Poul Anderson called "The Last Monster," and the no less effective "Man of Destiny" by John Christopher, both tackling social implications of human-alien contact with some emotion. Jack Vance's "The King of Thieves" (a Magnus Ridolph episode) and Gordon R. Dickson's "Lulugomeena" are both gimmick stories which are soon forgotten, but the last three stories, Eric Frank Russell's "Ultima Thule," Lester del Rey's "Into Thy Hands" and Arthur C. Clarke's poetic "Transcience" are satisfying and linger in the memory.

Leslie Flood

"Gone Away—No known address"

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